# FACTORS HINDERING THE GROWTH OF THE DERIVATIVE MARKET IN KENYA

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## DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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## ABSTRACT

A financial derivative is any security whose value is derived from the price of some other underlying asset. Derivatives are in this way considered a vital tool for financial risk management. The transacting in derivative instruments has now become common among institutional investors such as banks, fund managers, insurance companies and other non-financial corporations. However, in as much as the derivative market has been proclaimed as a risk management tool, its growth and reputation has not been widely spoken of as much as other financial instruments traded in Securities exchange institutions in Africa as a whole and Kenya in specific. To this effect the study sought to assess the current factors that hinder the growth of the derivatives market as an acceptable risk management and investment option in Kenya. This study was undertaken in Nairobi, Kenya where findings were based on the derivative market within the Nairobi Securities Exchange. The target population of the study was the employees from trading participants within the NSE dealing in derivative transactions. The researcher adopted a purposive sampling technique to select the sample population for data collection. The researcher collected data through the use of self-administered questionnaires. The set of questions within the questionnaire were comprised of closed and open ended questions. Processing and analyzing of the raw data was done using the data analyses program Statistical Package for the Social Sciences (SPSS) which was used to generate inferential statistics and descriptive statistic and run a regression analysis. The study found that amongst the factors discussed, the regulatory framework and liquidity levels in the capital market significantly hinder the growth of the derivative market in Kenya. The findings of the study show that the derivative market in Kenya has an average to below average growth rate as indicated by majority of the respondents. The reasons provided for this scenario include a regulatory framework that is not able to capture all financial risks in the market and hence protect investors, as well as low level of liquidity characterized by large changes in asset prices. The study recommends that the current framework should be reviewed and standardized so as to capture all inherent risks associated to the derivative market in Kenya. The authorities governing the capital market should also come up with ways that improve speculation and reduce the large changes in asset prices as well as create more channels that can be utilized to increase information about trading in the derivative market



**Key Words:** Derivatives, Securities market, financial instruments, risk management

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## LIST OF ACRONYMS

| | |
|---|---|
| **CCP** | Central Counterparty Clearing House |
| **CMA** | Capital Market Authority |
| **EMIR** | European Market Infrastructure Regulation |
| **FOMS** | Futures and Options Market Segment |
| **NSE** | Nairobi Securities Exchange |
| **OTC** | Over The Counter |
| **OTFs** | Organized Trading Facilities |
| **SEFs** | Swap Execution Facilities |
| **UK** | United Kingdom |

## DEFINITION OF TERMS

**Derivatives:** Any security whose value is derived from the price of some other underlying asset (Brigham and Houston, 2008).

**Growth**: Refers to the direct outcome of investment into business activities with indicators such as number of staff, financial position, stock levels and number of sale outlets (Lorne, 2006)

**Access**: The ability to have financial resources available for business activities (Kariuki, et al., 2015).

**Financial Market**: Market place used for the trade of securities that include equities, stocks, bonds, currencies and derivatives (Morgan, 2013).

**Over the Counter Derivatives**: These are contracts, whether forward contracts, futures, or options which are privately negotiated between two counterparties. The terms of the contracts are customized to suit the parties to the trade(Eklund et al., 2012).

**Exchange Traded Derivatives**: These are contracts traded over a futures exchange. Exchange traded contracts tend to be liquid and there is no counterparty risk and are based on equities, bonds and short-term interest rates (Lorne, 2006).

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Brigham and Houston (2008) define a financial derivative as any security whose value is derived from the price of some other underlying asset. Sundaram and Das (2011) in addition to this definition note that the instruments which mostly include options, swaps and forward and futures depend on the payoffs of other, more fundamental, volatile instruments such as stock prices, currency exchange rates, a commodity price, an interest rate, or even the price of another derivative instrument.

Brigham and Houston (2008) explain that financial derivatives are not new but have been around for years for example in Egypt where the Alexandria's futures market recorded cotton transactions back in 1865 and during that period in cotton merchants met at Alexandria's Café and cut deals based on supply and demand. Over the years, the trade in derivatives has developed and diversified in nature and use. Morgan (2013) gives an example of the UK pension funds which has in the last 10 years increased their usage of derivatives, either directly or through fund managers, as a means of managing the risks associated with their liabilities. Derivatives are in this way considered a vital tool for financial risk management. In order for the risk management framework to be considered effective, it should have an adequate comprehension of all the financial risks faced by the institution. The framework should also possess the flexibility to accommodate any change in business activities. The existence of imperfections that lead to risks within capital markets provide an incentive for firms to use derivative instruments. While these imperfections might be necessary for optimal use of derivatives, they are however not sufficient conditions.

Elliot, Hufman and Makar (2003), argue that given incentives, a firm's ultimate decision to use derivatives also depends on the cost of managing the risk. Morgan (2013) in an informational text intended to make understanding derivatives easier, explains that using a derivatives overlay is one way of managing risk exposures arising between assets and liabilities, helping users to hedge 'unrewarded' risks such as interest rates and providing greater flexibility around asset allocation. According to Dodd (2002) derivatives markets emerged as part of an effort to better manage the risks of global investing explaining that they are linked to operational gains since they are in essence a form of insurance or rather risk

management in its least form. It is noted that using derivatives allows market participants to meet the demand for cost-effective protection against risks associated with movements in the prices of the underlying investment instruments. These risks include fluctuations in exchange and interest rates, equity and commodity prices, as well as credit worthiness (Dodd, 2002). The aim of transacting in derivatives is transferring the expected risks of an investment from entities less willing or able to manage them to those more willing or able to do so.

Derivatives transactions are considered as common transactions by institutional investors that include commercial banks, investment banks, central banks, fund managers, insurance companies and other non-financial corporations. Arrow and Turnbull (1999) note that the participants in derivatives markets are often classified as either "hedgers" or "speculators". Hedgers enter a derivative contract to protect against adverse changes in the values of their assets or liabilities so that a fall in the value of their assets will be compensated by an increase in the value of the derivative contract. Speculators enter such contracts with the aim of profiting from anticipating changes in market prices, rates and credit events.

Mwangi (2003) in a research paper on hedging practices against interest rates of commercial banks in Kenya examined the ways and reasons why commercial banks in Kenya use instruments such as options, futures, forwards and swaps against interest rate, equity, foreign exchange movements among others. Mwangi (2003) observed that in deed many banks operating in Kenya borrow funds abroad where cost is cheaper for the purpose of lending locally and with sound hedging policies in place, banks are able to make profits out of these transactions which is therefore among the key reasons for growing the derivative market in Kenya's money market.

Sinkey and Carter (2000) note that firms' derivative activities can as well increase the value of a firm by reducing the expected costs of financial distress. However, there are also theories predicting the use of derivatives by firm owners can increase firm riskiness. A major factor being that the instruments are highly leveraged, so small miscalculations can lead to huge losses. Derivatives are also complicated, hence, not well understood by most people. The results of some empirical studies also show that it appears to be very difficult indeed to generate profits on the basis of forecasting the financial risk although it may also be possible to make speculative gains in certain markets over certain periods of time. According to Brigham and Houston (2008) derivatives are used far more often to hedge risks than in harmful speculation but these beneficial transactions never make the headlines. Recent

studies in the Kenyan context have not been able to inform on the beneficial element of the derivatives creating an information gap for other researchers and decision makers.

### 1.1.1The Growth of Derivative Markets

In an assessment of the rich network of interconnections within the contemporary financial environment, Eisenberg and Noe (2001) note that the value of most firms is dependent on the payoffs they receive from their claims on other firms. Research has also shown that effective financial risk management can bring far reaching benefits to all organizations, whether large or small, public or private sector (Ranong and Phuenngam, 2009).

In conventional financial theory, it is assumed that investors are rational wealth-maximisers who follow a set of basic financial rules and strategize their investment decisions based on the risk-return considerations (Baker, 2001). The common needs that investors look for from their investments include: security of original capital; wealth accumulation; comfort factor; tax efficiency; life cover; income; simplicity; ease of withdrawal; and communication. Lofthouse (2001) suggests that all organizations must consider several factors that may influence their decisions to use a specific investment instrument including; asset classes to include in the portfolio; weights assigned to various asset classes; the selection strategies to use with each asset class and evaluation of the other four steps.Lorne (2006) examined the extent to which exchange-traded derivative market growth has been hindered by regulations that constrain investment funds and advisors from using derivatives in Canada. The study concluded that the different licensing requirements experienced in the study area was the main factor underpinning the underdevelopment of the derivative market. This means that for a securities market to increase its trade in derivatives market, there needs an existing enabling legal framework.Agala (2010) in a similar study in Kenya also found that the regulatory and policy framework at the time when futures and options were being traded under the Futures and Options Market Segment (FOMS) at the NSE was not well developed.

Hull (2008) in regard to the development of the instrument notes that established financial derivatives have been a preserve of developed economies while emerging economies have not yet taken full advantage of the market.Eklund, Sandstrom and Von Rosen (2012) in an assessment of the major changes in the derivatives market over the years note that the G20 countries in realization of the growth and influence of the borderless market met to discuss its challenges in Pittsburgh in 2009 and in Cannes in 2010. The challenges noted were that the over the counter (OTC) derivatives market had poor transparency and neither was it regulated

to any great extent, which led to great uncertainty regarding what might happen on that market should any participant be impacted by serious problems. Another challenge of derivative trading in the developed economies as noted by Eklund et al. (2012) is the fact that parties trading derivatives with each other using OTC, determine the conditions for the derivative contract themselves and how trade shall proceed, unlike when trade takes place on a stock exchange, and the stock exchange sets the conditions.

Mazin and Akhawayn (2006) in a study on derivative products in emerging markets observes several obstacles to the trading of derivative products including a market structure concentrated in just a few major institutions, on which the stability of the whole macro-economy depends. Other factors highlighted by Mazin and Akhawyn (2006) include a thin and illiquid local financial markets, little information technology infrastructures, severe volatility, weak political structures and lack of awareness in advanced methods for the identification, measurement, management and control of financial risks by the regulatory body. Lastly, Mazin and Akhawayn (2006) noted that there is lack of adequate historical and current databases in emerging markets that limit the markets expansion.

Another study by Kinyua (2014) on the adoption of equity derivative markets in Kenya using a descriptive and inferential study design applied to a target population of 19 NSE member firms as well as Capital Markets Authority (CMA) staff found that equity derivatives would create efficiency in the capital markets especially due to the increased market scrutiny, price discovery mechanisms for the underlying equity instruments as well as boost fund performance. Kinyua (2014) finds that the most prominent challenge posed by the introduction of equity derivatives would be market capitalization, as well as market turnover especially on the levels of liquidity. Another major challenge noted by Kinyua (2014) is the need for skilled personnel in the financial sector that can understand the complex nature of derivative instruments. The existing monetary and fiscal policy is also considered inefficient in handling the specific market while lack of good political resolve, single ownership and dispute resolution mechanisms also impede the development of the equity derivative market.

### 1.1.2Derivative Market in Kenya

Kenya's Securities market has mainly been driven by traditional companies in the banking and brewery industry and some manufacturing companies which are well poised to take advantage of funds raised through the derivative market. Plans only commenced in 2015 on the introduction of a derivatives market known as NEXT at the NSE. The Derivatives Market

facilitates the trading of Futures contracts as a starting point in the Kenyan market (NSE, 2018). The introduction of the market in late 2016 was necessitated by the increased volatility in asset prices of local and international financial markets; increased integration of the Kenyan financial markets with the international markets and; more sophisticated risk management tools and strategies available. The NSE's derivatives market aim is at providing future contracts and specifically equity index futures and single stock futures and as a result allow companies access to funds hedging on the value of their assets with a fixed "payback" at a future time agreed by the parties (Kariuki, et al., 2015).

According to NSE (2018) the NEXT component operates through a structure that comprises the Clearing House, Clearing Members, Trading Members and Investors. The Clearing House is a wholly owned subsidiary of the NSE while the clearing members are either banks or financial institutions that are responsible for clearing, settlement and risk monitoring of Trading Members. Investors open accounts with trading members who buy and sell derivative contracts on their behalf.

## 1.2 Statement of the Problem

In as much as the derivative market has been proclaimed as a risk management tool to the extent that participants can hedge or offset a future risk using different derivatives, its growth and reputation has not been widely spoken of as much as other financial instruments traded in stock exchange institutions in Africa as a whole and Kenya in specific. Mishkin and Eakins (2012) in their assessment of financial markets and institutions note that derivatives are simply not well understood or traded in most parts of Africa with the exception of South Africa, Ghana and Nigeria. This means that challenges also exist in African economies with regards to understanding, mastering and implementing the concepts embedded in high finance that create an enabling environment for the development of derivatives. However, this assessment was made before Kenya's Nairobi Securities Exchange (NSE) decided to introduce the derivative markets as an alternative risk management and investment instrument through the NEXT platform.

Initial research by Orina(2009) on the factors hindering the trading of financial derivatives in the Kenya'sNSE using a sample of brokerage member firms found that the main factors hindering the trading of financial derivatives in the NSE were the infancy of the NSE market, lack of awareness about financial derivative products and the notion that it is an expensive risk management technique. The regulation and accounting complexities associated with

financial derivatives, less developed political structures and government policies to ensure stability of financial systems and complexities in valuing financial derivatives were also cited to be some of the factors hindering the trading of the financial derivatives in the NSE. However, the study's findings and the challenges identified may not hold in the current environment due to the time gap.

Authors such asNgugi, et al. (2013),Mutende(2009) and Kinyua(2014)focusing on Kenya find that the use of financial derivatives is mainly influenced by legal and regulatory framework, market environment, operational efficiency and the role of financial market intermediaries. However, since its introduction in October 2015, NSE's NEXT derivative market has not been assessed further in terms of the growth prospects of the market while previous studies gave more attention towards explaining the concept of derivative markets, relevance to the Kenyan financial market and expected challenges in operation based on the experience of the Futures and Options Market Segment (FOMS).To this effect the study seeks to assess the current factors that hinder the growth of the derivatives market in the Nairobi Securities Exchange and in this way fill the information gap.

## 1.3 Objective of the Study

### 1.3.1 General Objective

The main objective of the study is to examine the factors hindering the growth of derivatives market in Kenya.

### 1.3.2 Specific Objectives

i. To establish the effect of the regulatory framework on the growth of the derivatives market.

ii. To evaluate the extent to which liquidity hinders the growth of the derivatives market.

iii. To determine the effect of information dissemination on the growth of the derivatives market.

## 1.4 Research Question

The study will aim at answering the following research questions:

i. What is the effect of the regulatory framework on the growth of the derivatives market?

ii. To what extent does liquidity hinder the growth of the derivatives market?

iii. What is the effect of information dissemination on the growth of the derivatives market?

## 1.5 Justification of the Study

It is expected that the findings of the research will enlighten all the stakeholders in the financial sector on the need to have a rampant derivative market for various benefits while improving awareness of risks inherent in the derivative market. The findings and recommendations of this study would also be useful to the various financial institutions in Kenya struggling with issues of improving their capital flows and risk management by highlighting the benefits of the market in improving on working capital and minimizing risk exposure. This would definitely improve risk management operations of financial institutions and help re-invent the future of the Securities exchange in Kenya.

Above all, the study is expected to form a basis for further research on the topic of the growth of the derivative market and its impact on the financial sector in Kenya.

## 1.6 Scope of the study

This study will be undertaken in Nairobi, Kenya where findings will be based on the trading participants within the derivative market operated by the Nairobi Securities Exchange. The study area will be the derivative market of the NSE as the case and the employees of the trading participants as the target population.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter comprises the review of literature by different authors on the topic of derivative markets and the factors affecting its development and growth, the gaps to be filled in literature, summary of the review and the conceptual framework. Literature review is the systematic process of identification, location and analysis of the documents containing information relevant to the problem under investigation.

## 2.2 Theoretical Literature

The following theories form the philosophical basis on which the research takes place, and forms the link between the theoretical aspects and practical components of the investigation undertaken.

### 2.2.1Cognitive Evaluation Theory

The cognitive evaluation theory proposed by White (1959) and deCharms (1968) assumes that intrinsically motivated behavior is that which allows an individual to feel competent and self-determinant to undertake a specific decision. Other proponents of the theory such as Ryan and Deci (2000) suggest that rewards associated to investment and other financial decisions have two basic properties, that of information and control. Calder and Staw (1975) in providing their evaluation of the cognitive evaluation theory pay attention to the psychological basis of making decisions and introduces the concept of intrinsic motivation as a factor that is taken in consideration when making rational decisions.

Intrinsic motivation which is derived from knowledge, accomplishment or stimulation (Weinberg and Gould, 2003) can thus either be increased or decreased by the use of rewards under the theory depending on the individual's self-determination and competencies. The results of initial studies in the effects of rewards, feedback, and other external events on intrinsic motivation formed the basic components for the formulation of the cognitive evaluation theory.

Subsequently, they have been confirmed in both laboratory experiments and applied field studies, many of which have been done in classrooms by proponents of the theory such as

Deci, (1971); Harackiewicz, (1979);Deci&Cascio, (1972) and others likeVallerand& Reid, (1984).This theory therefore explains that a person's decision can be altered by rewards or benefits received from making the decision. In this study the decision to invest into the derivative market can be likened to a decision that entails future or delayed benefits depending on the individual's choice, this benefits being the key determinant of the decision to transact in the market. The study will use this theory to indicate that the choice to invest into a segment of the financial markets is also dependant on the assumed rewards that the investment option offers and in this way the decision to invest will be based on the information available about the investment instrument.

### 2.2.2Liquidity Preference Theory

According to Hicks (1939) the liquidity preference theory asserts that economic units have a preference for liquidity over investing. The concept of liquidity preference as a determinant of interest rates was developed by Keynes (1936). According to the theory, the interest rate adjusts to balance the supply and demand for money. Keynes (1936) argued that when people lend their money their liquid assets decline, they must be paid for the liquidity they have forgone.

The fact that there exists a need by economic units to possess a specific level of liquidity that can be utilized in acquiring goods and services, provides a condition for the preference for liquidity.Another reason for the need to be liquid is that near term future expenditures can be difficult to predict. According to Wray (2007) the liquidity preference theory is best interpreted as a theory of asset pricing in an economy. Keynes (1936) also stressed the existence of uncertainty as a necessary condition for the existence of liquidity preference indicating that all securities and monetary instruments that may be used in an economy as part of monetary policy are subject to uncertainty and the risk attached to the process of liquidity transformation. This implies that there is a need for individuals, governments and firms to be able to sell securities at a short notice without significant losses occurring in the financial markets and at the same time a durable and continuous source is providers for producers.

However, the liquidity preference theory only considers supply and demand as flexible variables while income remains stable limiting its application to short-term conditions. According to the perception of Diamond and Dybvig's (1983) liquidity depicts that savers can receive shocks after choosing either an illiquid, high-return project and a liquid, low-return

project as investments. Those receiving shocks want access to their savings before the illiquid project produces. This risk creates incentives for investing in the liquid, low-return projects. Diamond and Dybvig (1983) that it is prohibitively costly to verify whether another individual has received a shock or not. This information cost creates an incentive for financial markets to emerge and grow. The study uses the liquidity preference theory to show that liquidity can therefore be viewed as an influential factor in the growth of derivative instruments.

### 2.2.3 General Interest Theory

The theory was developed in reaction to the limitations that arose within the cognitive evaluation theory. The theory indicates that the content of tasks and the context in which they are presented increases intrinsic motivation to the extent that they indicate that performing the task helps satisfying the needs, wants and desires (Eisenberger, Pierce and Cameron,1999). The general interest theory does not confirm the role of reward and incentives in increasing intrinsic motivation and thus action in an individual. According to Harackewicz and Manderlink (1984) the personality and the culture of the individual will influence his/ her needs or desires and therefore the intrinsic motivation to act. Although there is no specific behavioral research with preference to uptake of specific investment instruments, Soman and Cheema (2002) show that that preferences for investment instruments differ significantly and that the choice of an investment mechanism is often driven by simpler considerations like convenience, acceptability, accessibility and habit.

In conventional financial theory, the decisions by investors are assumed to be rational and aimed at maximizing the wealth of the investor. The rational investor is also considered to adhere to specific basic financial rules and basing investment decisions on the risk-return consideration (Baker et al, 1977). This may explain the level of interest in an instrument as well as the level of trading. According to Pike and Neale (1996) although the existence of uncertainty is inherent in all decision-making, it is particularly pertinent in situations where the implications of the investor's decisions have a far-reaching effect on an organization. Investors in this regard make various considerations based on the timing, frequency and amount that can be invested in a venture. Trade-offs must therefore be made between the expected and risk levels of the venture so as to allow the executives of the organizations to fulfill multiple objectives in their investment decisions.

## 2.3 Empirical Review

### 2.3.1 Regulatory Framework and Growth of Derivative markets

Elliot, Hufman and Makar (2003) indicate that a regulatory framework entails the scope of risk to be managed, the process and procedures to manage risk and the roles and responsibilities of individuals involved in the process. Ravichandran (2008) explains that the recent changes that have occurred in the trends and status of the use of derivatives has led to calls for regulation. This is because new risks may arise or be created through the act of hedging risks using derivatives. The financial industry and regulators have therefore been in constant debate over the use of legislation to meet those concerns. This continuous debate has resulted in a need to harmonies the market to an internationally accepted model and ensure that the harmonized market is recognized by both traders and regulators. An international body was also recommended to set up procedures that will ensure derivatives are effective in risk management and do not pose a risk to investors, institutions and national/global economies.

According to the World Bank (2012) in an International Finance Corporation (IFC) annual report summarizing its innovations and leadership role in the private sector globally, policy and regulation have been extensively used to support the development of a diverse range of delivery channels for the financial sector. The regulatory framework is found to be an important element of the growth of intermediation in developing countries as well as building capacity of financial systems to meet local and international demands. An effective framework should, therefore, be comprehensive enough to capture all financial risks a firm is faced with and have flexibility to accommodate any change in business activities (Elliot, Hufman&Makar, 2003).

According to Peetz and Genreith (2011) the regulators of the derivatives market include the external and internal mechanisms of controlling and facilitating the trading in derivatives. These therefore include the stock exchange rules and regulations and ethics and standards imposed by the players in their associations. According to Peetz and Genreith (2011) participants can also be influenced by external regulation from the capital market authorities and other government agencies who determine the interest rate regimes, transaction charges, taxation rate and licensing fees. These factors are considered to affect the derivatives market

and even discourage investors and other users from participating and therefore if not well aligned to meet the participant expectations would affect the derivatives market and even discourage investors and other users from participating.

An agreement by G20 leaders in September 2009, was that standardized OTC derivatives will be traded on exchanges, Swap Execution Facilities (SEFs) or Organized Trading Facilities (OTFs), processed through clearing houses (CCPs) and reported to repositories. The standardization has resulted in the introduction of the Dodd-Frank Act in the United States and the European Market Infrastructure Regulation (EMIR) in Europe. The regulations increase the need for transparency on the derivatives market by requiring information on the overall size of the market as well as details on exposures in place at any given time. The changes created by the regulations ensure that transactions made in the trade of derivatives are sufficiently collateralized to meet initial and variation margin requirements. In this way the trading of derivatives requires strict regulations so that investors investments can be cushioned against risky fluctuations and losses in the market, however, the literature is not clear on the effect this has on the amount of trade that takes place in reaction to this, providing a gap that the study will seek to address.

### 2.3.2Liquidity and Growth of Derivative Markets

Stock market liquidity refers to the ability of investors to buy and sell securities in the stock market with easy transfers. According to Bliss and Kaufman (2006) adequate liquidity is among the requirements for an enabling environment for the trading of financial derivatives in addition to stable interest rates, reasonable transaction taxes, healthy industry competition and accommodative cultural orientations.Kaufman and Scott (2003) also explain that the four main environmental factors that may pose a challenge to the development of financial derivatives include volatile interest rates, high transaction taxes, inadequate liquidity, unhealthy competition and negative cultural orientations. A positive level of liquidity implies that a market is characterized by interest from investors on the instruments and therefore hedging through the use of derivatives will also be in demand.Since a market cannot depend solely on speculation, the existence of this demand is important for the growth of a derivatives market (Falconbridge, 2007).

According to Stange and Kaserer (2009), liquid assets in their different classes and quantities have the advantage of being tradable without costs and delays. Markets that are characterized

by lack of liquidity often have fewer daily transactions and large changes in asset prices which can result in higher risks for investors.

According to a report by IOSCO (2007) having adequate liquidity in a market is crucial in ensuring that the market operates efficiently. When a market is liquid it facilitates entry and exit in a manner that is least disruptive i.e. at minimal loss to nominal values, low transaction costs, and within a short time frame. Peterhoff et al. (2016) also indicate that investors and issuers in a liquid market are largely enabled to meet their requirements when either making an investment, financing, or hedging, as well as reducing investment costs and the cost of capital. In this regard, when a market is more liquid, this means that it is more likely to attain a favorable match due to the wider set of potential counter offers for transactions. Investors are therefore, generally attracted to markets with higher levels of liquidity making liquidity a crucial aspect to both the growth and development of markets such as the derivative market.

### 2.3.3 Information Dissemination and Growth of Derivatives markets

Harris (2002) explains that the information available in the trading process can affect the trading strategies of market participants. According to Falconbridge (2007) speculators whose main aim is to gain returns upon buying low and selling high are the participants who engage in the derivatives market with aim of taking advantage of the fluctuating process in assets due to various environmental factors. Falconbridge (2007) however notes that there is no hard evidence to support the correlation between a society's appetite for gambling and the success of its derivatives markets. The argument by Adelegan (2009) points out that market participants in the derivative market include retail investors, professional traders, asset managers and short –term equity traders.Njoroge, Matumo and Maina (2013) in a study of the factors influencing development of financial derivatives markets using listed companies in Kenya finds that most of the respondents comprising of staff of the Capital Market Authority(CMA), Quoted Companies at Nairobi Securities Exchange and Financial Market intermediaries were not aware of financial derivatives instruments. The resultant effect is that investors would not be informed of the basic understanding of the instruments available and the terms of transactions in the market.

According to the behavioral finance theory investors are not always considered as being rational, most of the time their behavior shows irrationality such as moods of investors, which have influenced the asset prices and the implication of portfolio selection on asset management. Investor's sentiments can lead to market bubbles and variation of price of

security in the market. Investor's opinions attitudes and decisions are mainly influenced by emotions, risk and future cash flows. According to Bennet, and Selvam(2011) behavioral theories concerned with the discounted value of future cash flows is reflected in the stock prices and investors are not always rational market participants. In classical finance theory, investors are always rational in respect of information and decision making. Whereas behavioral finance theory consists of the irrational sentiments of investors that have a great impact on stock prices (Bennet and Selvam, 2011). Another argument by Patterson and Sharma(2006) takes note of the fact that investor's sentiments in financial markets are defined as the overall attitude toward the particular financial market or security. Sentiments influence the movements of price of security in the market, if bullish market there is a rise in price and in a bearish market fall in prices. Investor's sentiments lead to belief about future cash flows and risks of the security while the sentiments of the market lead to overpriced and underpriced stock.

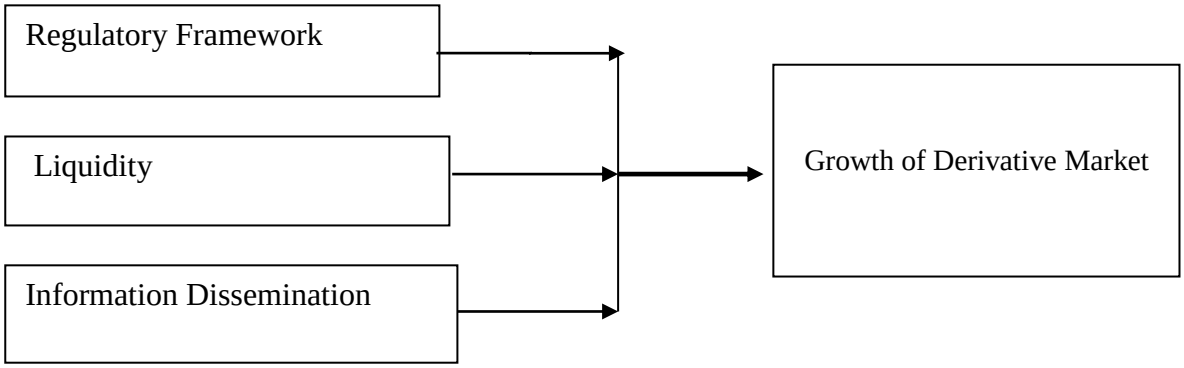
A study by Chang et al (2000) finds that there exists a relationship between investor's sentiments and return and volatility in the Chinese stock market. In this study, lack of experience and sentiments highly influenced the stock return. They found that, high sentiments lead to high stock return and low sentiments leads to low return in the market. Bennet, et al. (2012) explain the effect of stock return of 18 countries using consumer confidence as a proxy of investor's sentiments. The main conclusion of this study is when sentiment is high the stock return is lower and the when sentiment is lower, stock return tends to be high. The result main categories of stock are value of stock, small stock, growth stock.

According to Kasisomayajula(2012) the lack of information about the secondary market and the process of trading is among the key hindering factor for investors trading in the secondary market. Retail investors should therefore understand the risks and advantages of trading in commodities futures before making an investment. After gaining an understanding of the challenges facing an industry, the attributes that are considered are information which is also obtained from financial statements and financial analysis, including forecasts and ratios, along with non-quantitative information obtained through site visits to assess quality of management, quality of product, and customer satisfaction. Kortum and Lemer (2000) explain that historical financial information can also be useful in determining trends of a venture, in addition to being a tool to compare the company with competitor information available. In this way, most of the literature indicates that inadequate information on the

instruments that are to be traded hinders the flow and growth of those instruments of investment since investors are not willing to invest blindly.

## 2.4 Conceptual Framework

**Independent variables** **Dependent Variable**




Source: Author (2018)

**Figure 2.1 Conceptual framework**

The Conceptual Framework is a graphical representation of the relationship in focus where the investor awareness, liquidity and regulatory framework act as independent variables and influence the growth of the derivative markets. Each of these independent variables will be assessed to find to what extent it has influenced the operations of the market and whether there has been an improvement since the introduction of the derivative market caused by any of the factors.

## 2.5 Operationalization of Variables

**Table 2.1 Operational framework**

| **Variables** | **Indicators and Information needed** | **Methods for data collection** |
|---|---|---|
| Regulatory Framework | ➢ Number of delivery channels.<br>➢ Level of strictness of framework.<br>➢ Number of trading rules | Structured questionnaires with close-ended questions |
| Liquidity | ➢ Level of ability to sell and buy instruments in short run.<br>➢ Condition of instruments.<br>➢ Level of ease of transactions. | Structured questionnaires with close-ended questions |
| Information Dissemination | ➢ Level of available information on derivatives.<br>➢ Number of target audience.<br>➢ Level of access to derivative instruments by investors. | Structured questionnaires with closed and open-ended questions |
| Growth of Derivatives market. | ➢ Volume of trade in derivatives.<br>➢ Number of derivatives instruments.<br>➢ Number of participants | Structured questionnaires with open-ended questions |

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter covers the research design, the target population, the sample size, instrumentation, data collection and analysis methods.

## 3.2 Research Design

The study utilised a descriptive research design. Descriptive research is designed to obtain pertinent and precise information relating to current status of phenomena and whenever possible to draw a valid general conclusion from the fact discovered. Cooper and Schindler (2001) explain the design to be concerned with answering questions such as who, how, what which, when and how much. A descriptive design was also found to be appropriate as the elements and the variables that were to be studied are simply to be observed without making any attempt to control or manipulate them.

## 3.3 Target Population

According to Castillo (2009) a population is generally a large collection of individuals or objects that is the main focus of a scientific query. A population can be defined as including all people or items with the characteristic one wishes to understand. In doing research, it is important to define the population as consistently as possible based on the purpose of the study (Mugenda and Mugenda, 2003).

The target population of the study was employees from the trading participants of the Nairobi Securities Exchange who are authorized institutions dealing with derivative transactions. The trading participants execute orders of clients in relation to buying and selling derivative contracts. There are 24 trading members working with the NSE (CBK, 2017). The study therefore targeted the staff from the 24 trading members.

## 3.4 Sample size and Procedure

The purpose of sampling is to gather information about the population under consideration at minimum cost, time and human power. According to Ary et al. (2006) sampling is the process of selecting a group of subjects for a study in such a way that the individuals

represent the larger group from which they were selected. The researcher adopted purposive sampling method to select the special informants who in the case of this study are employees of the trading participants that are designated to handle the derivative market. According to Benard (2002) purposive sampling technique, is the deliberate choice of a participant due to the qualities the participant possesses. In this regard, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience.

The total sample of the project would therefore be 48 respondents comprising of employees from the trading members (2 respondents from each).

### 3.5 Instrumentation

Data was collected by use of self-administered questionnaires which were designed and developed by the researcher. The set of questions within the questionnaire comprised of closed and open ended questions. This method of collecting data is a special purpose document that collects information and opinions from people who receive and respond to it. Main advantage of using this method is privacy to the respondent thus it enhances the sincerity of the information given. Generally it is relatively quick to collect information using a questionnaire (Mugenda and Mugenda, 2003).

### 3.6 Validity and Reliability Tests of the Instrument

Validity may be defined as the ability of a test to measure what it purports to measure (Joppe, 2000). To ensure validity of the study instruments, training research assistants on what the study entails, contents in the questionnaire and how to administer the questionnaire was undertaken. Experts in this field of study including supervisors and statisticians were also consulted to enhance the accuracy and reliability of the data obtained.

According to Joppe (2000) reliability referes to the extent to which results are consistent over time. To achieve reliability of the research instruments a pre-test before the actual data collection process was done to test the tools for clarity, relevance, wording and interpretation of questions among other anomalies in the questionnaire. Data collected from the pre-test exercise was analysed using the Cronbach's Alpha Coefficient method so as to achieve a correlation coefficient of 0.8 so as to consider the instrument reliable. Based on the responses and comments provided by the respondents in the pre-test exercise, the questionnaire was adjusted and the same communicated to the research enumerators.

## 3.7 Data Collection

The study used primary data to come up with conclusive information on the factors that influence the growth of the derivatives market in Kenya. Primary data is that which is original data collected for a specific research goal whereas secondary data is that which has been collected for a different purpose and reused for another research question (Hox&Boeije, 2005). The questionnaires were distributed to the respondents using the drop and pick method to ensure that the members of the institution have adequate time to complete the set of questions. Secondary data was collected from library books, journal articles websites, internet and NSE financial reports.

## 3.8 Data Analysis

The results of the study were of a qualitative and quantitative nature. According to Chandarn (2004) qualitative data is that data that has a non-numerical attributes that are related to the qualities, values or value assessment such as people's opinions whereas quantitative data is the data that holds numeric value and is factual in nature. The study used quantitative methods to analyze the data and examine the simultaneous effects of the independent variables on the dependent variables.

Processing and analyzing of the raw data was done using data analyses program Statistical Package for the Social Sciences (SPSS) which was used to generate inferential statistics and descriptive statistic and run a multiple regression analysis. The study as well ran a linear Regression analysis to measure the degree of the relationship between the dependent and independent variables. The Multiple Linear Regression model is specified as follows:

$$\mathbf{Y=\beta o+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\varepsilon}$$

Where:

Y is growth of derivative market measured by volume of trade

$X_1$=Regulatory framework

$X_2$= liquidity

$X_3$= Information dissemination

$\varepsilon$ = Error Term

$B_0$ = Constant, $\beta_1$, $\beta_2$, $\beta_3$ =Coefficient of the independent variable $X_1$, $X_2$ and $X_3$ respectively

## 3.9 Diagnostic Tests

### 3.9.1 Multicolinearity test

Multicollinearity is a statistical phenomenon in which there exists a perfect or exact relationship between the predictor variables (Joshi, 2012). Perfect/ exact relationships makes it difficult to come up with reliable estimates of individual coefficients within the predictor variables. Multicollinearity therefore results in incorrect conclusions about the relationship between independent and dependent variables. The study tested for multicollinearity by using the Variance Inflation Factor which is used to quantify the severity of multicollinearity in an ordinary least squares regression analysis.

### 3.9.2 Normality Test

A normality test is used to calculate the probability that the selected sample in a research is drawn from a normal population. The study used the Shapiro-Wilk W Test which is the ratio of two estimates of the variance of a normal distribution based on a random sample of n observations (Royston, 1995).

### 3.9.3 Homogeneity Test

The test for homogeneity is a method, based on the chi-square statistic, for testing whether two or more multinomial distributions are equal (Conorver, Johnson and Johnson, 1981). The study therefore used the Chi-Square test statistic to test whether the distributions between the variables were equal.

### 3.9.4 Threshold

A threshold in statistics refers to a model where a threshold value, or set of threshold values, is used to distinguish ranges of values where the behaviour predicted by the model varies in some important way. In this study, the selection of a threshold shall be done using rank statistics (Benjamin and Hochberg, 1995). The method consists of building a rank distribution arranging the collected values in descending order and comparing the corresponding distributions. The comparison is particularly useful in making it easy to define the boundary between any two states of the data.

# CHAPTER FOUR

# DATA ANALYSIS AND PRESENTATIONS

## 4.1 Introduction

This chapter contains the data obtained from the questionnaires that has been examined, analyzed and a presentation of the finding done.

## 4.2 Data analysis and presentation

### 4.2.1 Response rate

The study used a sample size of 48 respondents from the 24 trading members working with the NSE selected through the purposive sampling method.

**Table 4.1Analysis of the response rate**

| **Questionnaires** | **Frequency** | **Percentage** |
|---|---|---|
| Not Returned | 14 | 29 |
| Returned and Filled | 34 | 71 |
| **Total** | **48** | **100** |

Source: Author, 2018

The questionnaires administered to the sampled employees totaled 48 of which 34 were returned and 14 were not. This resulted in a response rate of 71%. According to Barbie (2002) a response rate of 50% is adequate for analysis and therefore 71% is beyond that threshold.

### 4.2.2 Results from Pre-test

A total 4 questionnaires were administered to respondents from Francis Drumond Ltd and ICEA Lion Asset Management Company Ltd with a response rate of 100%.

**Table 4.2Reliability Statistics**

| Variable | Cronbach's Alpha | No. of Items |
|---|---|---|
| Regulatory Framework | 0.802 | 5 |
| Liquidity | 0.943 | 5 |
| Information Dissemination | 0.832 | 6 |
| Growth of derivative market | 0.873 | 9 |

In order to test the reliability of the questionnaire as well as the interview guide, Cronbach alpha was used (Cronbach, 1951). The cut-point (the level to which the questionnaire is considered good for data collection) is 0.8. In the event of a value lower than that, the questionnaire should be revised. In this study, Cronbach alpha values of 0.802 to 0.943 were obtained. As such, the questionnaire was considered fit for use in data collection.

### 4.2.3 Background Information

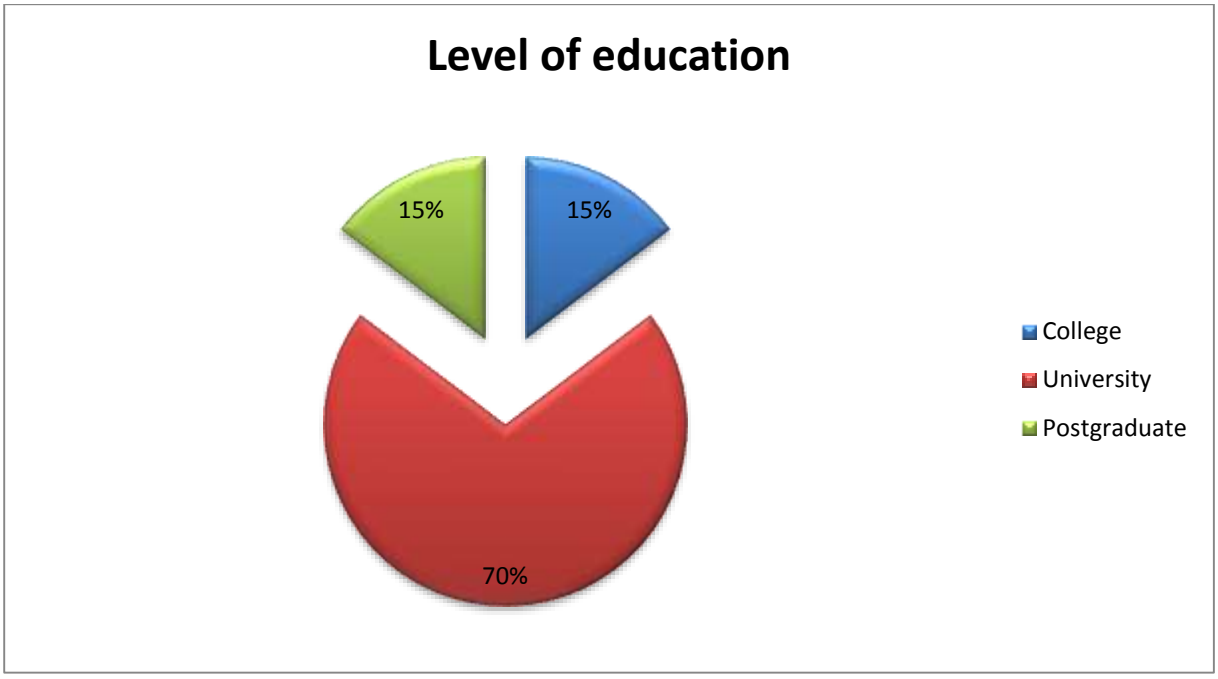
**Table 4.3Age of respondents**

| **Age of the respondents** | **Frequency** | **Percent** |
|---|---|---|
| 21 - 30 years | 29 | 85.3 |
| 31 - 40 years | 3 | 8.8 |
| 41 - 50 years | 2 | 5.9 |
| Above 50 years | 0 | 0 |
| **Total** | **34** | **100.0** |

Source: Author (2018)

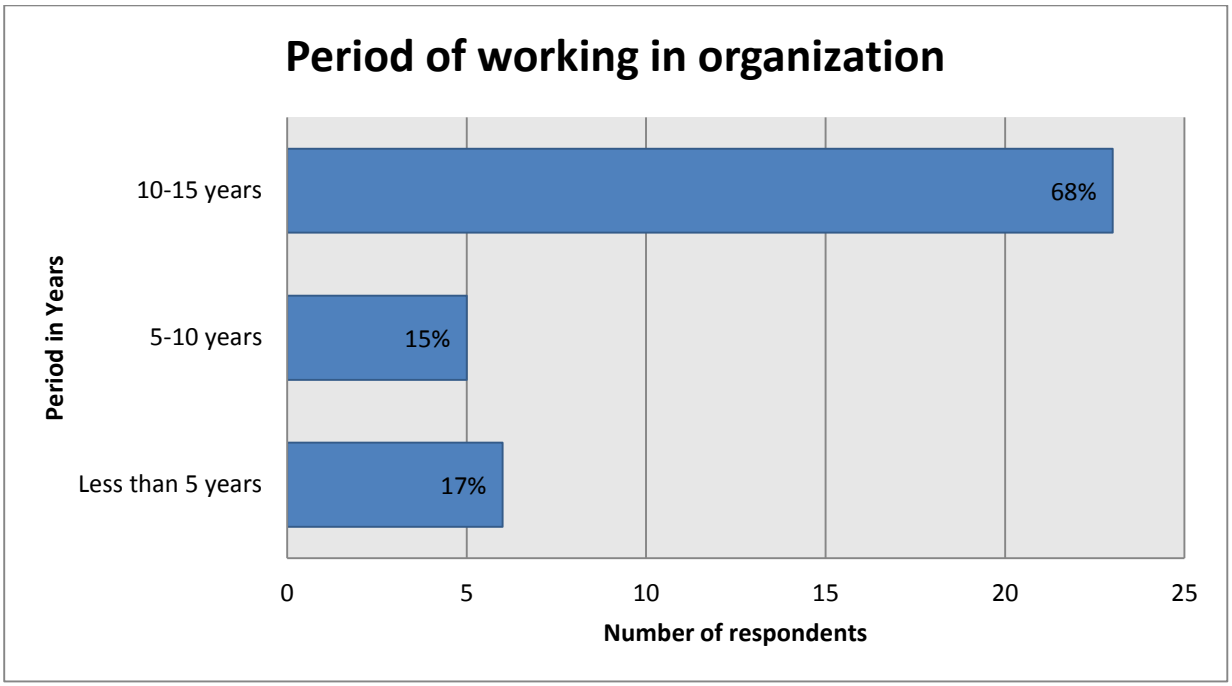
The age distribution of the respondents was that 85% were between 21 and 30 years of age and made up the majority, 9% of the respondents were between the age of 31 and 40 years while the remaining 6% were between 41 and 50 years. This shows that the majority of trade partners of the NSE employ a majority of young individuals.

**Figure4.1Education levels**




The data collected showed that the levels of education were divided into 3 categories whereby 70% being the majority had attained university level of education while 15% had undergone college education and another 15% having postgraduate level of education. This shows that the study was able to get diverse opinions in relation to the education levels and therefore levels of understanding the derivative market based on their education. It also shows that majority of the market partners of the NSE employee individuals that have tertiary level of education.

**Figure4.2Period respondents have worked in organization**




In regards to the period that the respondents had worked in their respective organizations, majority of the respondents as indicated by 68% in the figure 4.2 above indicated a period of between 10 and 15 years, 17% of the respondents said less than 5 years while 15% said that they had been in the same organization for 5 to 10 years. This indicates that the majority of the respondents had the experience and information about the financial market and therefore would provide relevant answers to the research questions.

### 4.2.4Regulatory framework and growth of the derivative market

**Table 4.4Importance of regulatory framework in ensuring optimal growth of market**

| Response | Frequency | Percent |
|---|---|---|
| Yes | 29 | 85.3 |
| No | 5 | 14.7 |
| **Total** | **34** | **100.0** |

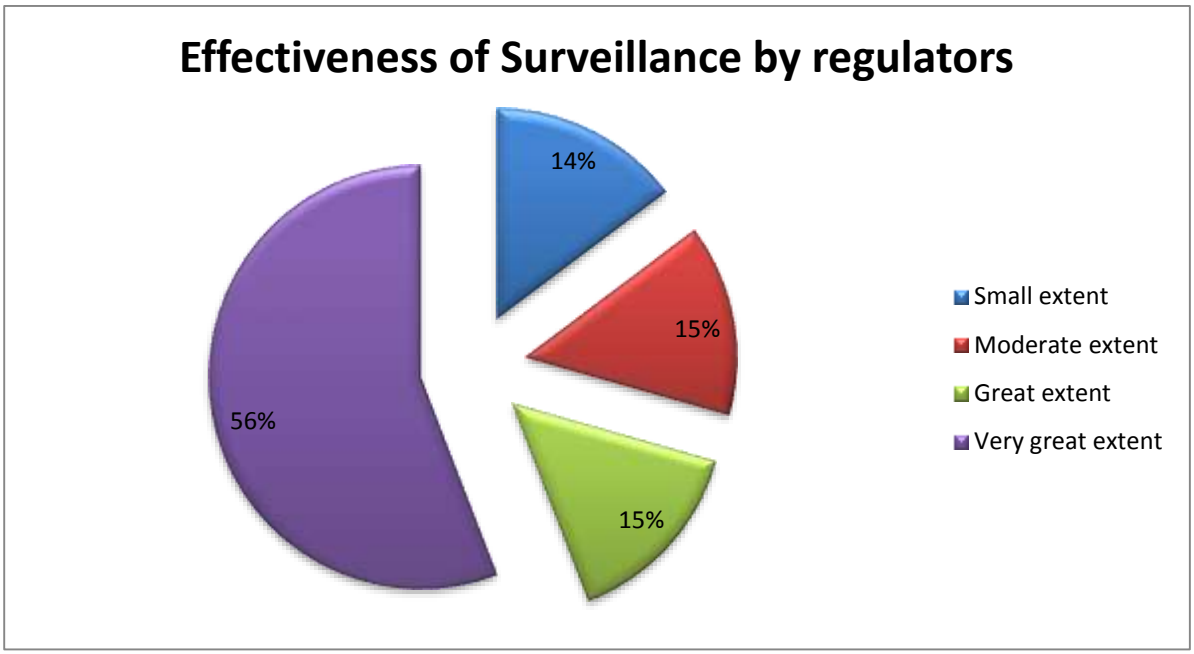
The data presented above shows that the regulatory framework is a crucial component of ensuring optimal growth within the derivatives maekt in Kenya as indicated by 85% of the respondents responding yes while only 15% of the respondents responded no. This may mean that the set policies have an influence on crucial components such as the interest rate regimes, transaction charges, taxation rate and licensing fees which are considered to affect the derivatives market and even discourage or encourage investors as suggested by Peetz and Genreith (2011). The growth of the derivative market in Kenya therefore requires that the legal frameworks governing the market exists. The respondents explained that this is because the framework provides checks and procedures for making transactions in the market which boosts the confidence of investors, it provides for healthy competition within the market, and protects against systemic risks in over the counter transactions.

**Table 4.5Extent of clarity of laws**

| **Extent of effectiveness** | **Frequency** | **Percent** |
|---|---|---|
| Not at all | 0 | 0 |
| Small Extent | 0 | 0 |
| Moderate extent | 10 | 29.4 |
| Great extent | 10 | 29.4 |
| Very great extent | 14 | 41.2 |
| **Total** | **34** | **100.0** |

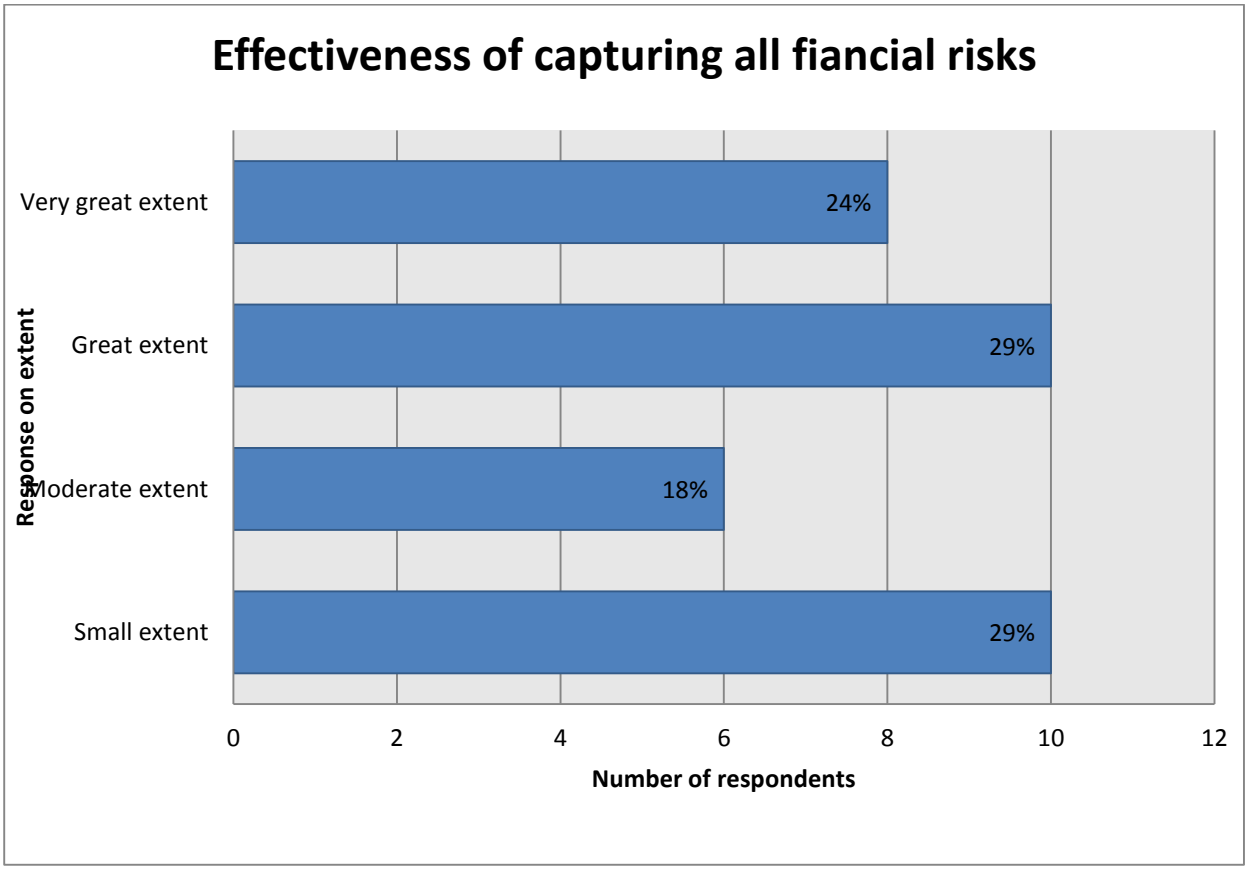
The data presented in Table 4.4 shows that 41% of the respondents consider that the clarity of laws in regards to derivatives trading and transactions is effective in the growth of the Kenyan market to a very great extent, 29% indicated that is effective to a great extent while another 29% consider the effectiveness of the clarity is to a moderate extent. The findings coincide with that of Ravichandran (2008) who explains that the recent changes that have occurred in the trends and status of the use of derivatives has led to calls for regulation resulting in a need to harmonies the market to an internationally accepted model and ensure that the harmonized market is recognized by both traders and regulators. In this way the harmonized regulations are clear in regards to the trading of derivatives and therefore can be termed as effective.

**Figure4.3Extent of surveillance effectiveness**



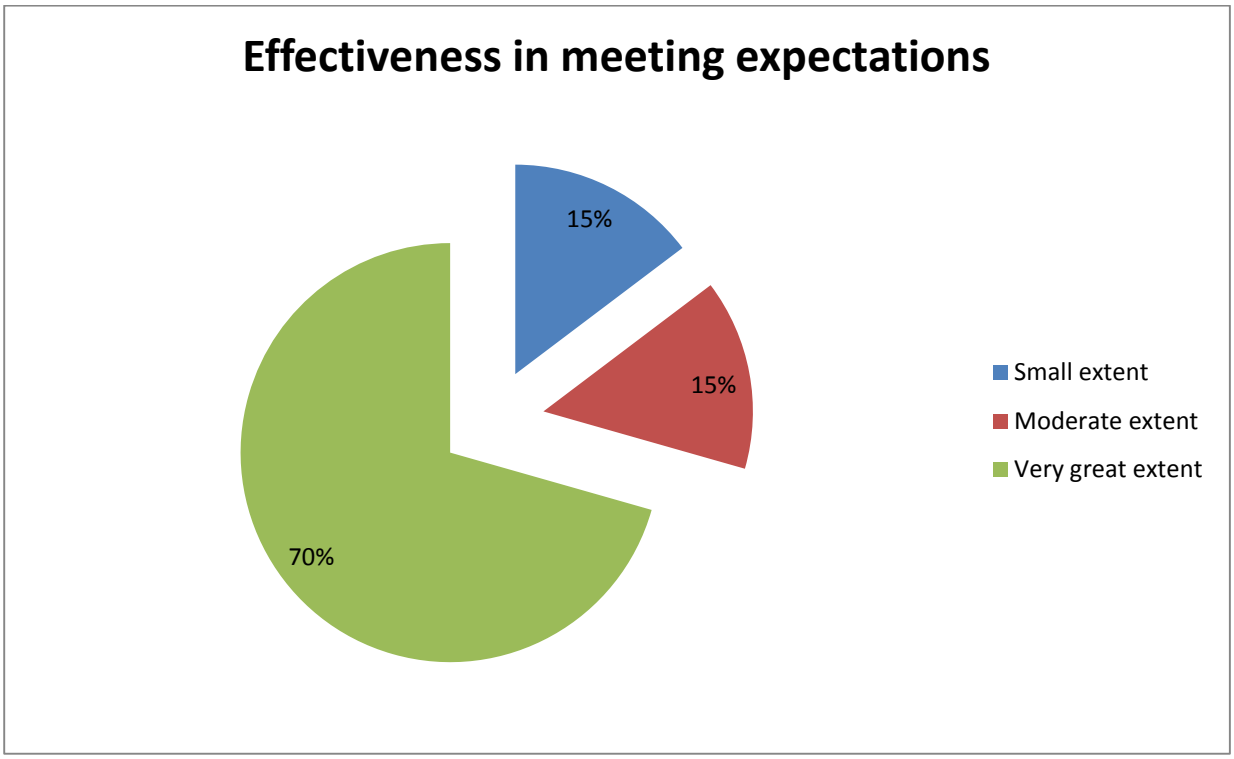

The data presented above indicates that majority of the respondents represented by 56% and 15%indicated that the surveillance by the regulator to deter market manipulation was effective to a very great extent and great extent respectively. Another 15% indicated that it was effective to a moderate extent while 14% indicated to a small extent. This shows that surveillance of the market from the regulators is recommended in the growth of the derivatives market. The findings agree with those of the World Bank (2012) that regular reporting and monitoring of the market is essential in ensuring that the market can develop a wide array of delivery channels to be used by investors.

**Figure4.4Extent of capturing all financial risks**




The data presented above indicates that in regards to the effectiveness of the regulatory framework in capturing all financial risks within the derivative market in Kenya, 24% indicated it is to a very great extent and 29% to a great extent while 18% said that it is to a moderate extent and 29% to a small extent. This shows that in as much as majority of the respondents agree with the statement that the regulatory framework is effective in capturing the financial risks associated to the derivative market, some room to improve is still available. The findings therefore agree with (Elliot, Hufman&Makar, 2003) who indicate that an effective framework should be comprehensive enough to capture all financial risks a firm is faced with and have flexibility to accommodate any change in business activities

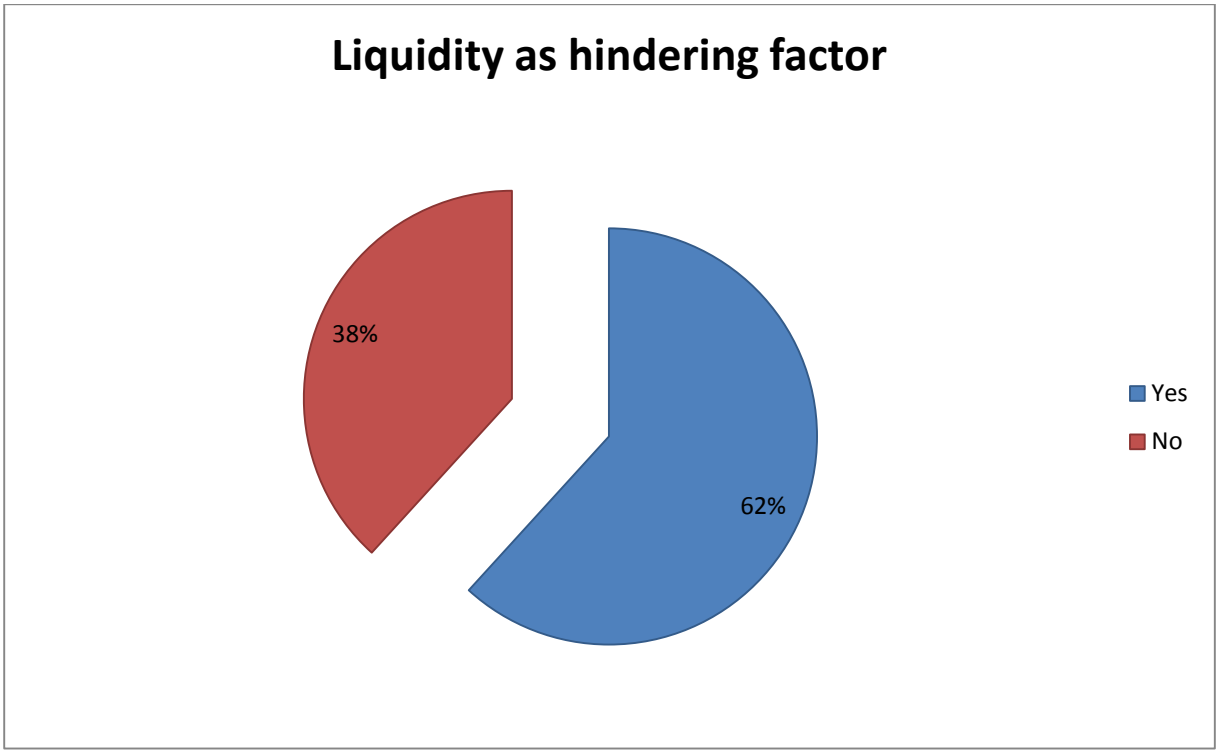
**Figure 4.5Extent of effectiveness in meeting participant's expectations**




In regards to the effectiveness of the regulatory framework meeting participant's expectations in regards to the charges, fees and taxes, the data above shows that 79% of the respondents share the option that it is to a very great extent, 15% say to a moderate extent and another 15% indicate to a small extent. The findings coincide with those of Peetz and Genreith (2011) who finds that meeting participant's expectations is among the factors that affects participation in the derivative market by either encouraging or discouraging investors.

### 4.2.5Liquidity and growth of derivative market

**Figure4.6Liquidity as a factor that hinders growth of derivative market**



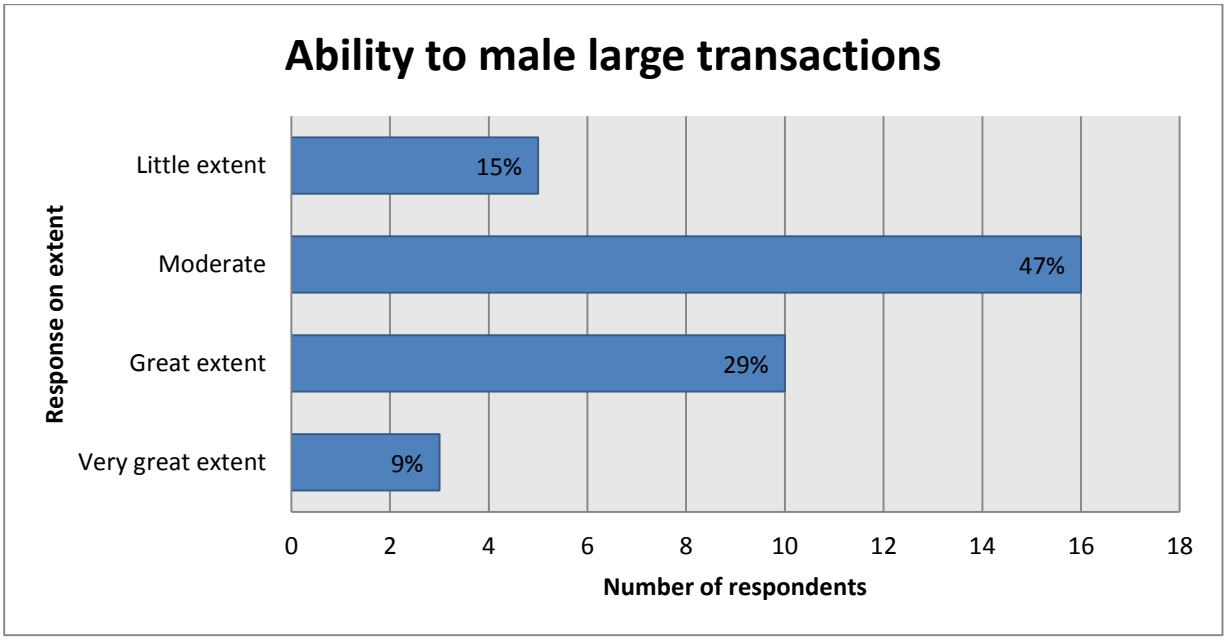

When asked whether liquidity in the capital market was a factor that hinders the growth of the derivative market, majority of the respondents as indicated by 62% in the figure 4.6 above indicated yes while 38% said no. This indicates that liquidity is essential in the derivative market as also indicated by the report by IOSCO (2007) which indicates that having adequate liquidity in a market is crucial in ensuring that the market operates efficiently. The respondents further explained that liquidity is crucial in the derivative market since it enables settlements of transactions in a short time and is essential for price discovery.

**Table 4.6Level of liquidity in derivative market in Kenya**

| Level of liquidity | Frequency | Percent |
|---|---|---|
| Very adequate | 11 | 32.4 |
| Adequate | 8 | 23.5 |
| Slightly not adequate | 5 | 14.7 |
| Not adequate at all | 10 | 29.4 |
| **Total** | **34** | **100.0** |

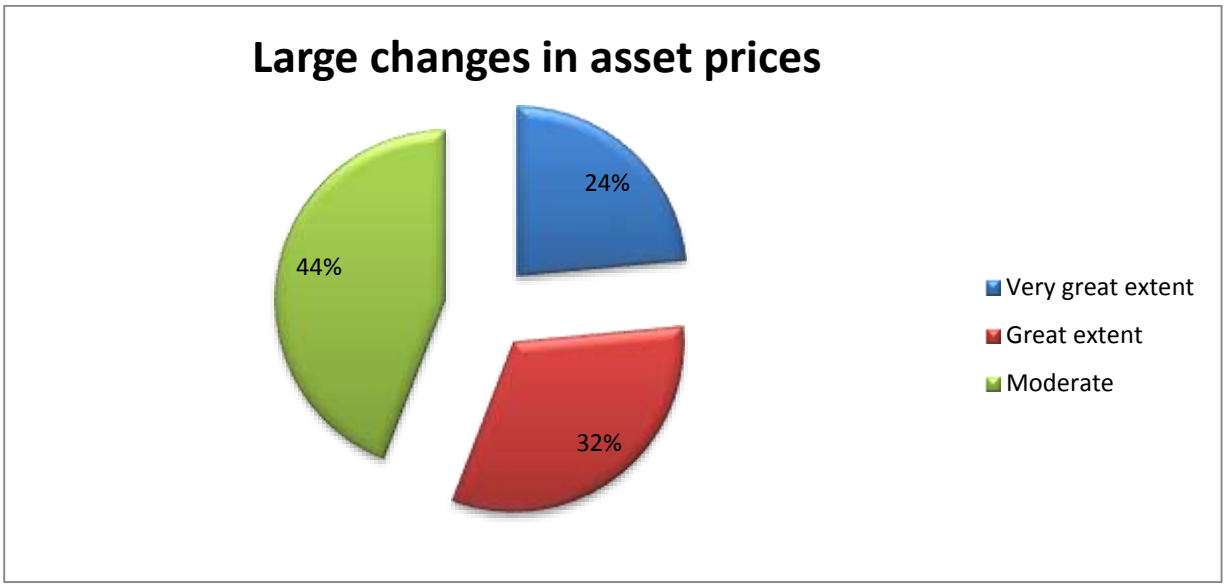
When asked what was the current level of liquidity in the derivative market in Kenya the data collected indicates that 32% of the respondents consider liquidity very adequate, 24% said it was adequate, 15% thought it was slightly not adequate while 29% considered it not adequate at all. The findings show that the derivative market is to a certain agreeable degree, able to make fast transactions in a timely manner. this is because a significant portion of the respondents having experience in derivative trading indicate that there is adequate to very adequate level of liquidity in agreement with the views of Peterhoff et al. (2016) who indicate that investors a adequately liquid market are largely enabled to meet their requirements when either making an investment, financing, or hedging, as well as reducing investment costs and the cost of capital. In this regard, when a market is classified as being liquid, it is more likely to attain a favorable match due to the wider set of potential counter offers for transactions.

**Figure 4.7Ability to make large volume transactions**




The data presented above shows that 47% of the respondents consider the current capital market to have the ability to make large volume transactions to a moderate extent, 29% indicate the ability is to great extent, 15% to a little extent while 9% of the respondents said that it was to a very large extent. The findings indicate that majority of the respondents are in agreement that there is significance level of liquidity that allows large volume transactions to be made meaning that investors are likely to be encouraged to invest and transact in the derivative market. This will eventually enhance the growth of the derivative market in Kenya as also noted by Peterhoff et al. (2016) that investors are generally attracted to markets with sufficient levels of liquidity.

**Figure4.8Large changes in asset prices**




The data presented above indicates that 44% of the respondents are of the opinion that the current capital market in which the derivative market operates has a moderate extent of large changes in asset prices while 32% indicate that the changes are to a great extent and 24% say to a very great extent. This means that the market is not suitable for transactions since large changes in asset prices hinder speculation and discourage investment in instruments that are classified as unstable. This finding also show that the level of liquidity may hinder the growth and level of transactions in the derivative market as also indicated by Stange and Kaserer (2009) that markets that are characterized by lack of liquidity often have fewer daily transactions and large changes in asset prices which can result in higher risks for investors. Since investors seek out instruments that have low risks, the derivative market will not be suitable as it relies on the suitability of the capital market to grow.

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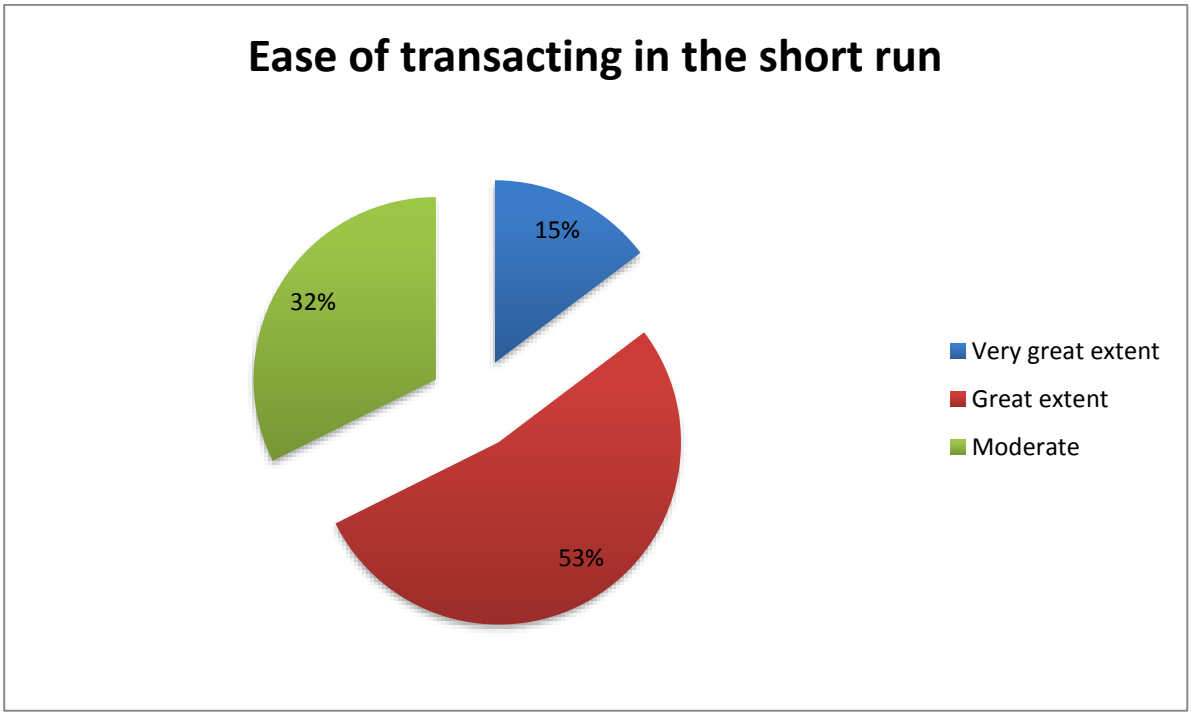
**Figure4.9Ease of transacting in the short run**




In regards to whether the current capital market is characterized by an ease in making large transactions in the short run, the data collected above shows majority of the respondents agreeing that this is the case. This is shown by 53% indicating a great extent of ease, 32% indicating a moderate extent of ease and 15% saying that it is to a very great extent. This means that the time at which a large transaction can be made in the capital market is not a hindering factor to the growth of the derivative market. The findings agree with the report by IOSCO (2007) which indicates that when a market is liquid it facilitates entry and exit in a manner that is least disruptive i.e. at minimal loss to nominal values, low transaction costs, and within a short time frame.

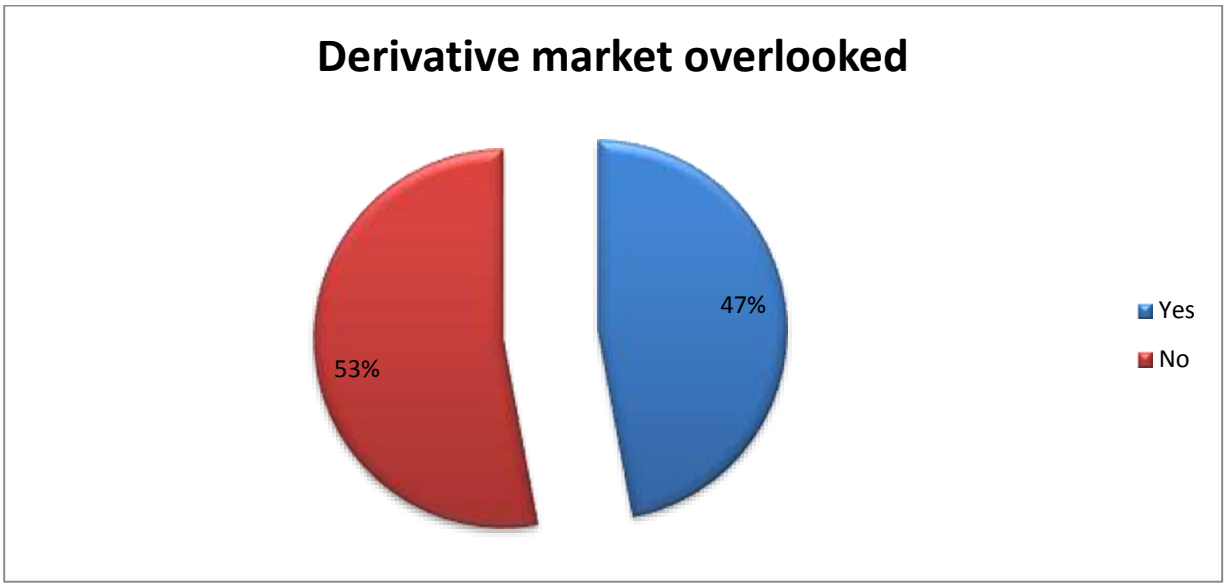
### 4.2.6 Effect of information dissemination on growth of the derivative market

**Table 4.7Present level of awareness of derivative market**

| Level of awareness | Frequency | Percent |
|---|---|---|
| Low | 19 | 55.9 |
| Average | 10 | 29.4 |
| Not sure | 5 | 14.7 |
| **Total** | **34** | **100.0** |

The data presented above indicates that majority of the respondents are of the opinion that the current or present level of awareness of the derivative market in Kenya is low as indicated by 56% in the table 4.6 above, while 29% indicate it is average and 15% say they are not sure. This shows that the bulk of trading members with the NSE agree that investors are not wholly informed about the derivative market and thus this may be a factor that can hinder the growth of the market. The findings coincide with those of Njoroge, Matumo and Maina (2013) who find that most of the staff of the Capital Market Authority (CMA), Quoted Companies at Nairobi Securities Exchange and Financial Market intermediaries were not aware of financial derivatives instruments. This lack of awareness as also noted by to Kasisomayajula(2012) is a key hindering factor for investors trading in a market.

**Figure4.10Derivative market overlooked by investors**



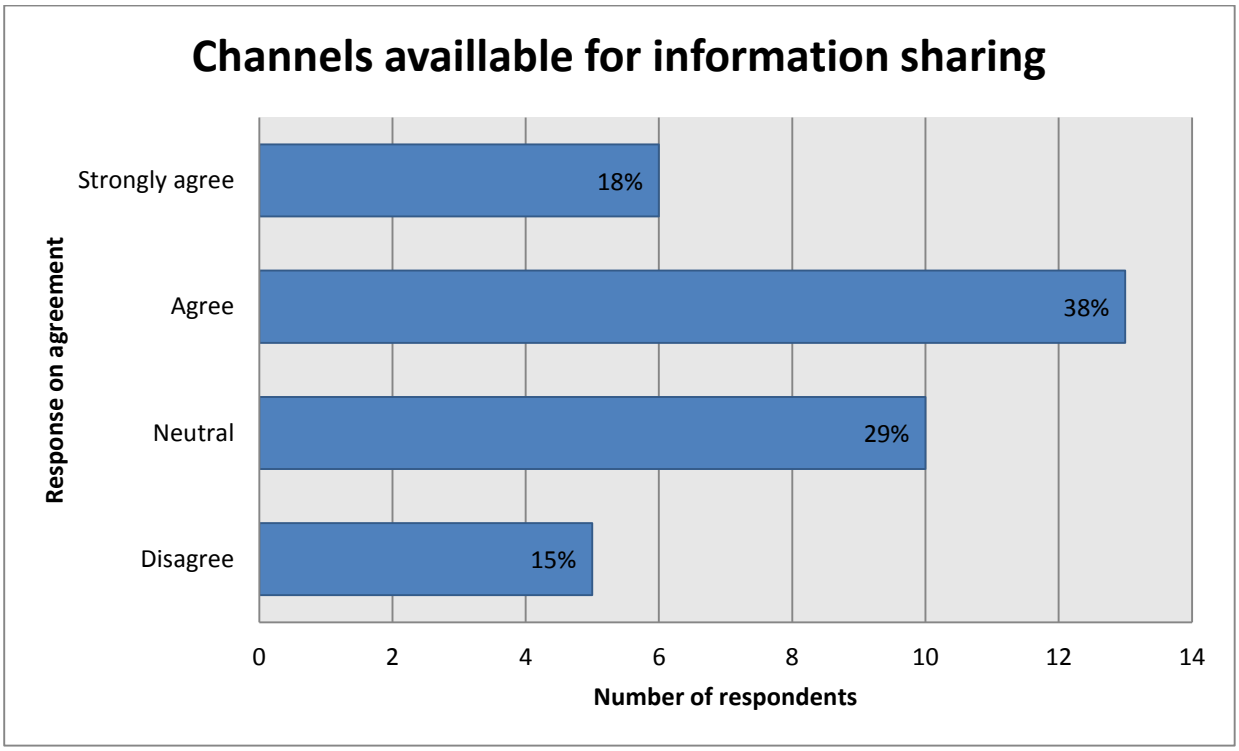

The data presented above indicates that majority of the respondents represented by 53% in Figure 4.10 above disagree that the derivative market has been overlooked by potential participants looking for investment options while 47% agreed. Reasons given by the majority of the respondents included that the derivative market acts as an indicator for investment decisions even when investors do not trade in derivatives and that other well-known instruments in the capital market are mostly preferred by the participants. The findings show that the derivative market is characterized by low investor sentiments and therefore agrees with the views of Chang et al (2000) that high sentiments lead to high stock return and low sentiments leads to low return in the market.

**Table 4.8Trend in growth of derivative market in Kenya**

| **Trend in Introduction** | **Frequency** | **Percent** |
|---|---|---|
| Average | 13 | 38.2 |
| Good | 5 | 14.7 |
| Below average | 16 | 47.1 |
| **Total** | **34** | **100.0** |

In regards to the trend of introduction of the derivatives market to investors in Kenya, the data presented above indicates that majority of the respondents as indicated by 47% are of the opinion that it is below average while 38% indicate that it is average and 15% say it is good. This means that the information dissemination process meant to increase information about the market has not been optimal leading to low sentiments and information about the market and thus hindering its growth. This is also the view of Kortum and Lemer (2000) who explain that inadequate information on the instruments that are to be traded in a market hinders the flow and growth of those instruments of investment since investors are not willing to invest blindly.

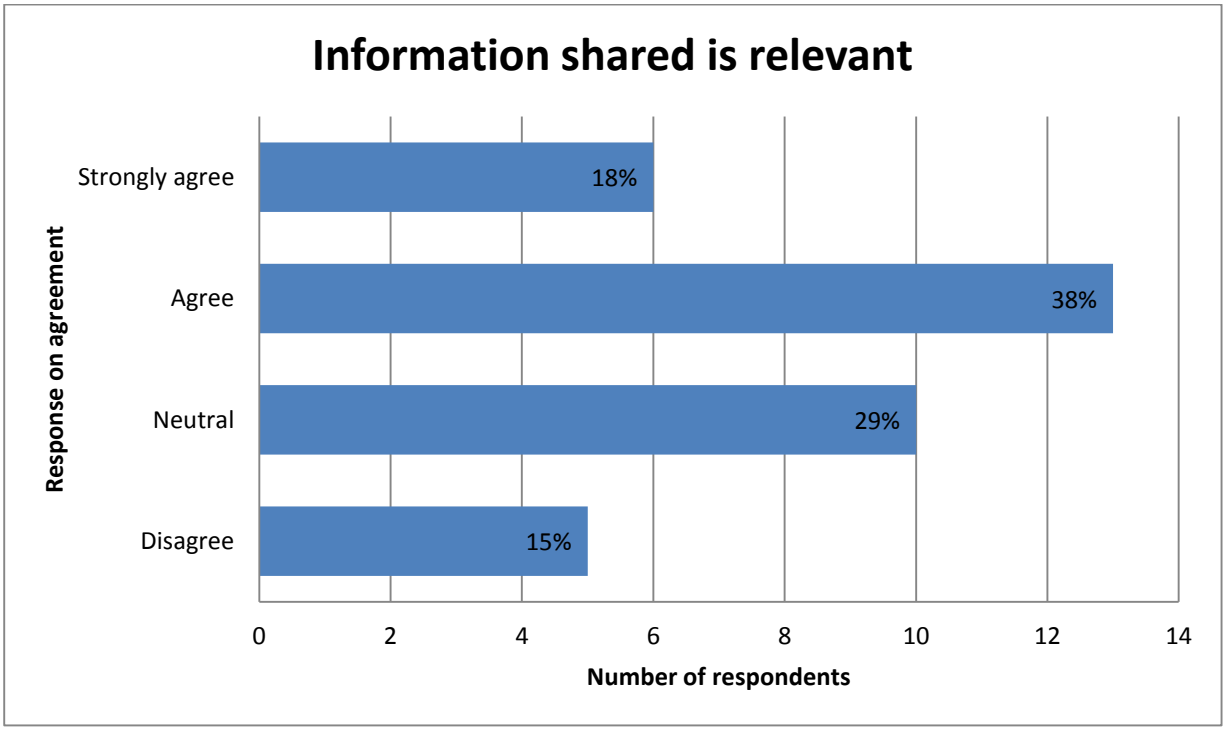
**Figure4.11Channels available for sharing information**




The above data indicates that the majority of respondents in this case represented by 38% were of the opinion that there existed channels of sharing information on the market while 29% remained neutral, 18% strongly agreed and 15% disagreed. This shows that there is current ways that the market participants can take advantage of to increase the information about the derivative market and increase participation by investors in the derivative market. The findings coincide with those of Kasisomayajula(2012) that information about a market can be mostly obtained from financial statements and financial analysis, including forecasts

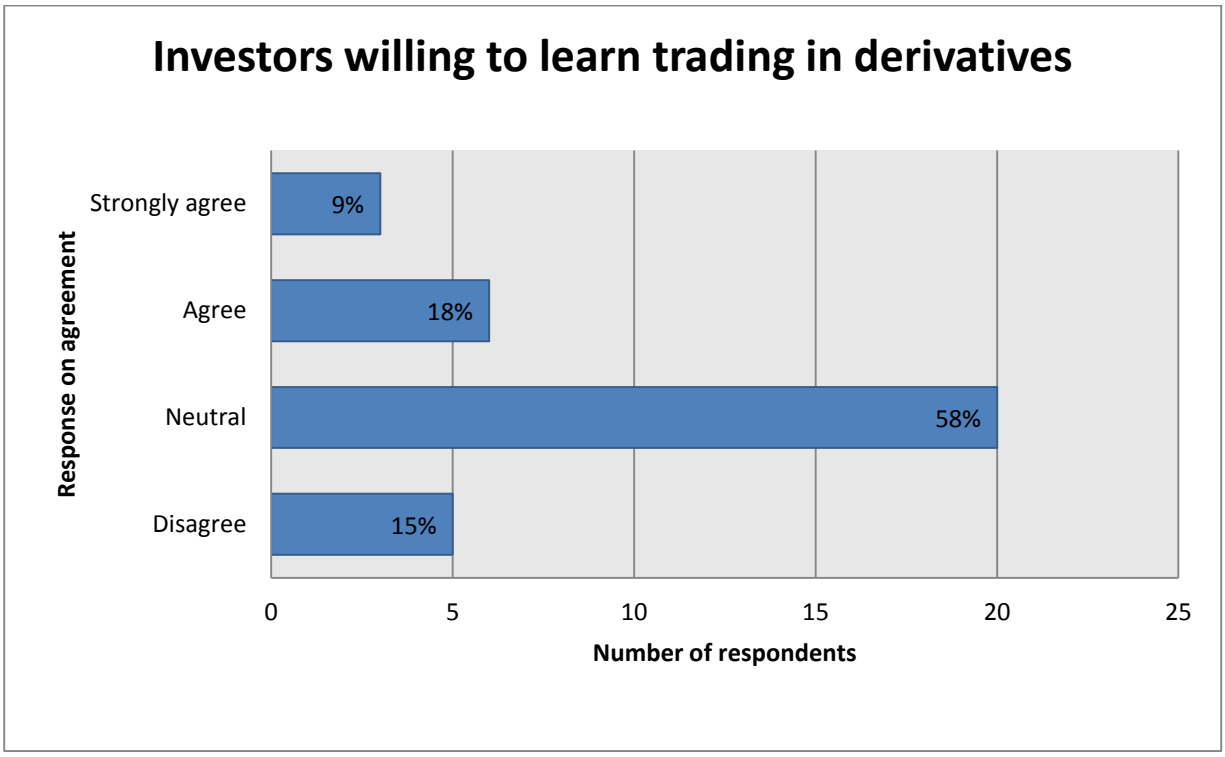
and ratios, along with non-quantitative information obtained through site visits to assess quality of management, quality of product, and customer satisfaction.

**Figure4.12Shared information is relevant to derivative market**




The data presented above shows that majority of the respondents are in agreement as indicated by 38% of the respondents responding agree and 18% saying strongly agree while 29% indicated that they neither agreed not disagreed (neutral) and the remaining 15% saying they disagree. This shows that the information in regards to the derivative market has been shared by the market participants through the available channels and that relevance of information is not considered a factor that may hinder the growth of the derivative market.

**Figure 4.13Investors willing to learn about trading in derivative market**

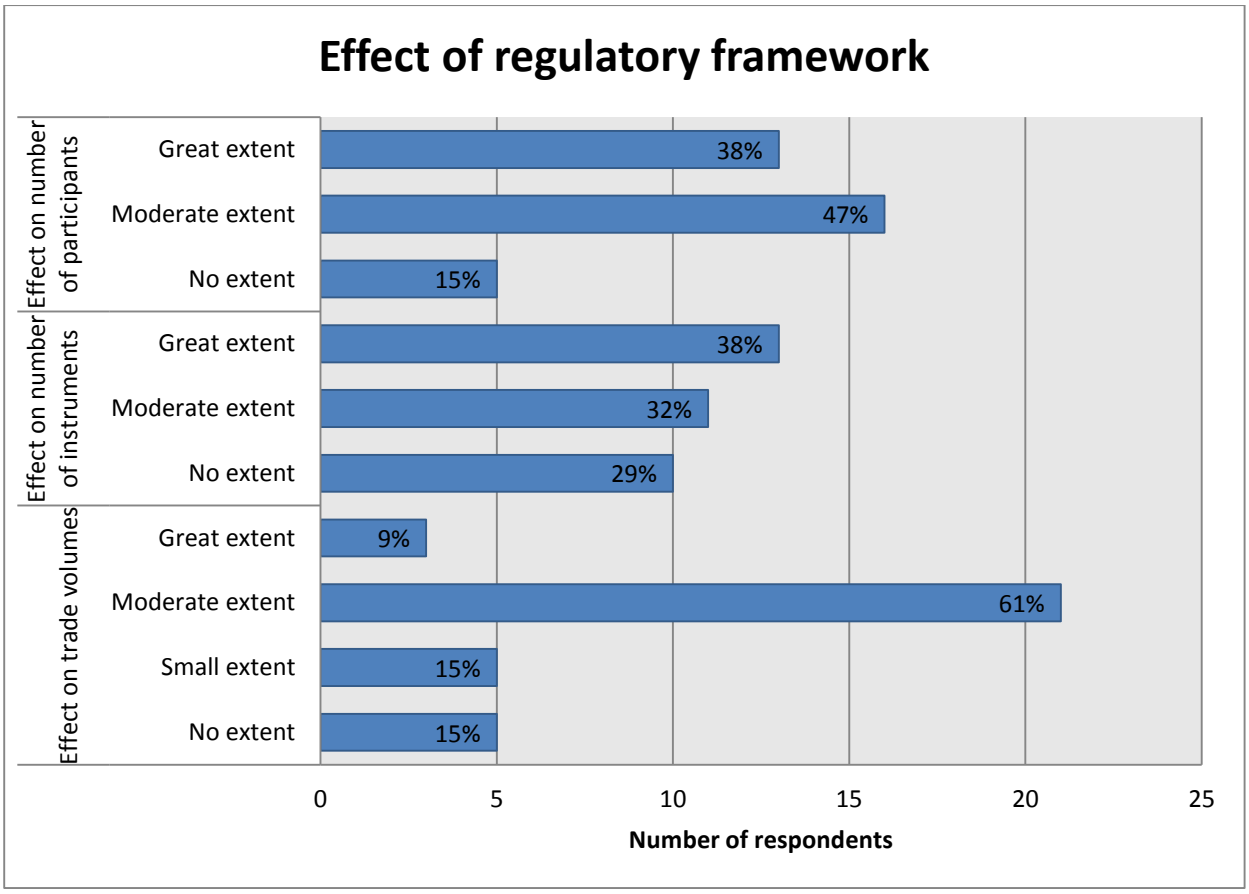



The data above shows that there is a significant lack of knowledge o the level of willingness of investors in learning about the derivative market and how trade is undertaken, this is shown by a majority of respondents of 58% indicating that they neither agree nor disagree while 15% disagree, 18% agree and 9% strongly agree. The data also shows that there is a significant interest in the trading of derivative instruments which means that the market may be characterized by investor sentiments which could enhance the growth of the market. This is also discussed by Patterson and Sharma(2006) that interest in trade in a market increase the

investor sentiments and this the sentiments influence the movements of price of security in the market, if bullish market there is a rise in price and in a bearish market fall in prices.

### 4.2.7 Growth of the derivative market

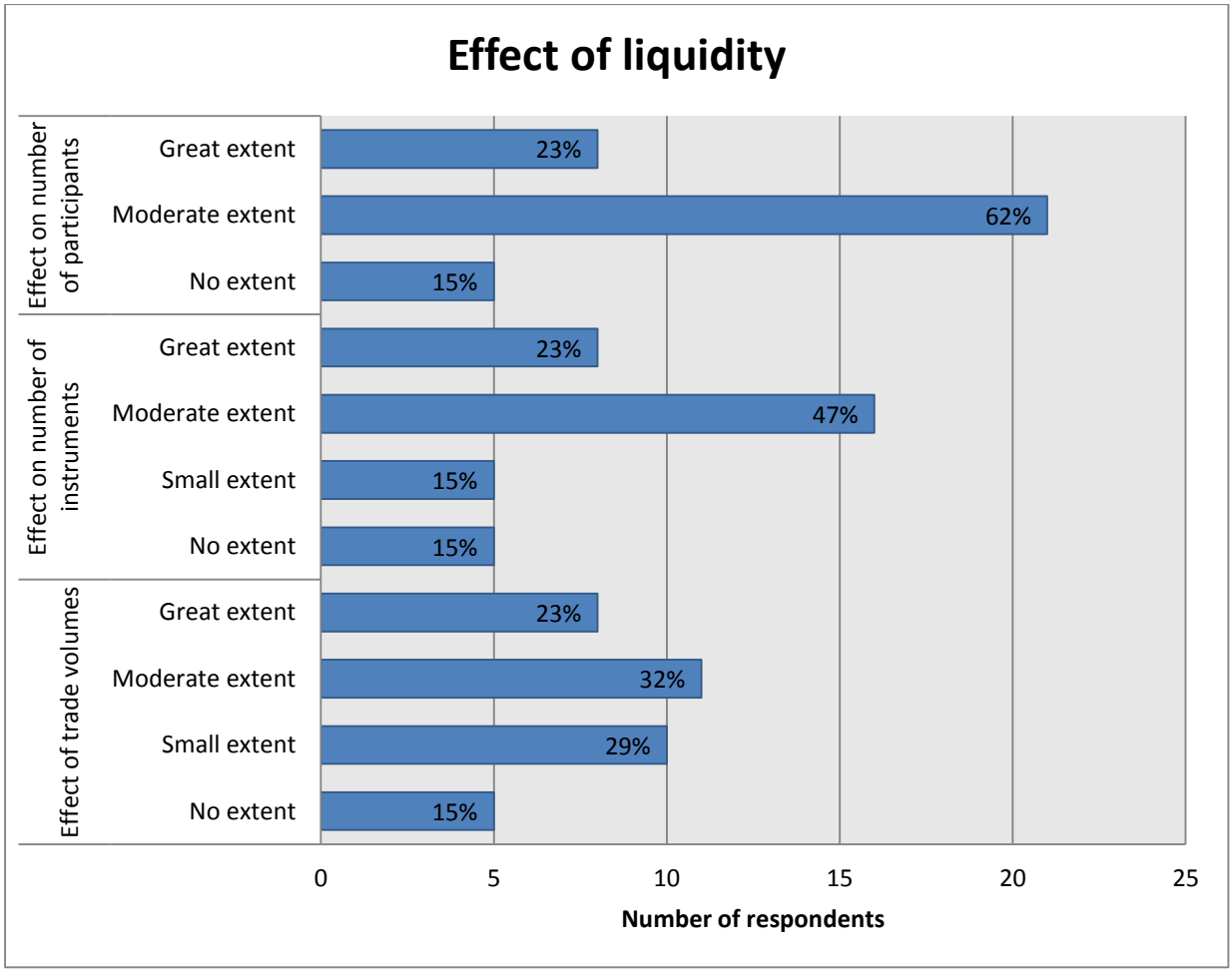
**Figure 4.14Effect of regulatory framework on growth of derivative market**




The data collected above relates to the effect of the regulatory framework on the growth of the derivative market in Kenya. The data shows that the components of growth within the derivative market that are greatly affected by the regulatory framework are the number of instruments and the number of participants as indicated by 38% of the respondents in both

cases. This means that the regulatory framework is considered a hindering factor on the number of participants and instruments in the market. The data also shows that in regards to the factors that are moderately affected by the regulatory framework, 61% indicated the trading volumes, 47% said number of participants and 32%b indicated number of instruments which means that the regulatory frameworks also significantly affects the trading volumes as well.

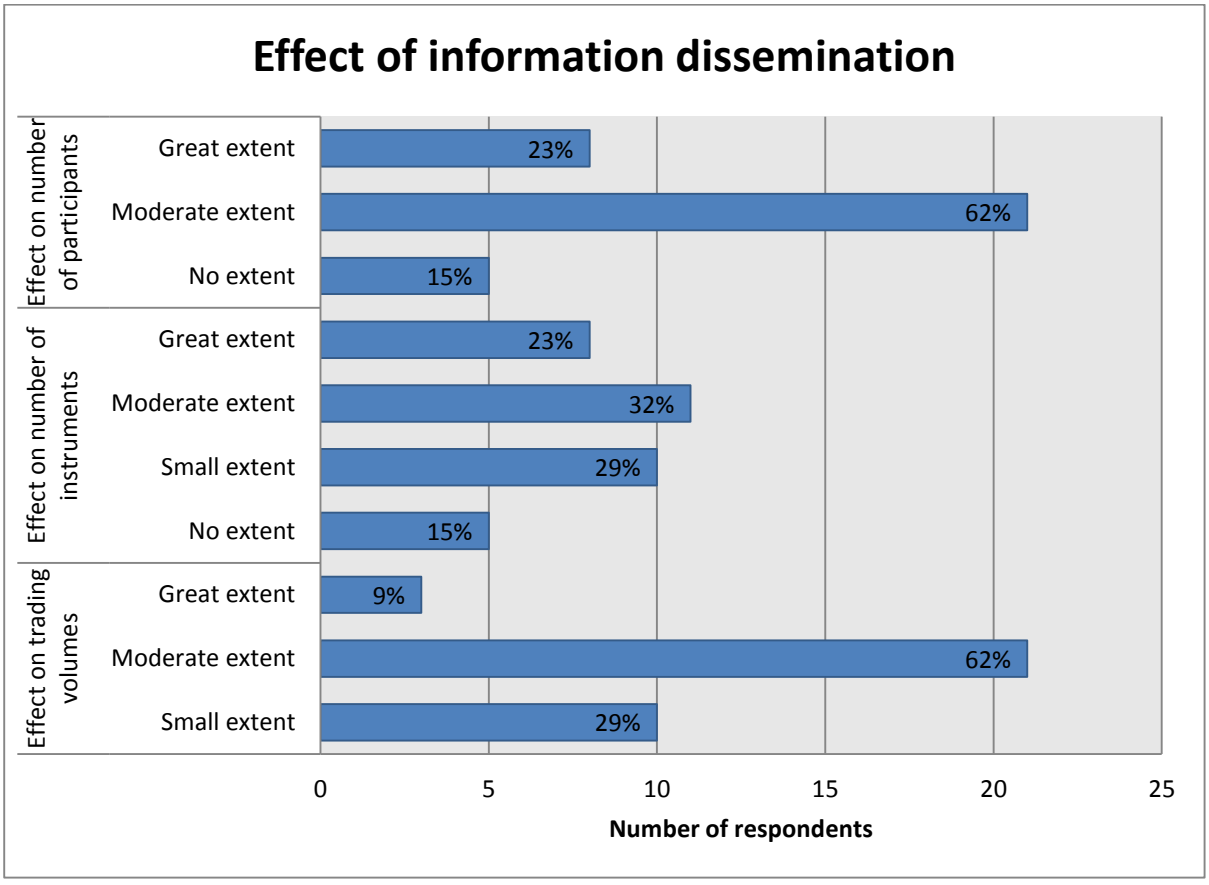
**Figure 4.15Effect of liquidity on the growth of the derivative market**




In regards to how liquidity affects the growth of the derivative market in Kenya, the data collected and presented above indicates that in terms of the relationship between liquidity and

number of participants, majority of the respondents (62%) indicated that there is a moderate extent of effect while 23% indicated a great extent. In terms of the relationship between liquidity and number of instruments, the majority of the respondents (47%) indicated there was a moderate extent of effect while 23% indicated a great extent and 30% said a small to no extent of effect. In regards to how liquidity affects the volume of trade, 32% of the respondents said to a moderate extent, and 29% said to a small extent, 23% said to a great extent and 15% indicated to no extent. The data therefore shows that the most affected growth factor in the derivative market by liquidity was number of participants where 23% of the respondents indicated a great extent of effect against 15% who said a small extent. However, all factors have been significantly influenced by liquidity with only trading volumes having 15% of the respondents saying that there was not extent of effect.

**Figure 4.16Effect of information dissemination on growth of derivative market**



The data collected and presented above relates to the effect of information dissemination on the growth of the derivative market in Kenya in regards to the trading volume, number of derivative instruments and number of participants. In regards to the relationship between information dissemination and the number of participants in the market, the data collected shows that the majority of the respondents (62%) were of the opinion that information dissemination affected the number to a moderate extent while 23% indicated to a great extent and 15% to a small extent. The data also shows that in terms of the effect on the number of instruments, 32% said that information dissemination had a moderate effect, 29% said a small extent of effect, 23% said a great extent and 15% said it did not affect the number at all. In regards to the effect on the trading volumes, the majority of respondents ((62%) said that the effect was moderate, 29% said there was a small extent of effect while 9% indicated a great extent of effect. The data shows that while all factors are affected by information dissemination to a certain extent, the most affected factors of growth in the derivative market were number of instruments and number of participants in the market.

## 4.3 Regression Output and Multicollinearity Tests

**Table 4.9Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 2.691 | .447 | | 6.021 | .000 | | |
| | Regulatory framework crucial in derivative market growth | 2.346 | .553 | .904 | 4.245 | .000 | .357 | 2.804 |
| | Liquidity as hindering factor to derivative market growth | -1.188 | .304 | -.628 | -3.911 | .000 | .626 | 1.597 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Current Level of Awareness of market | -.251 | .286 | -.200 | -.879 | .386 | .312 | 3.208 |

a. Dependent Variable: Trend in Growth of market

The study undertook a regression test on the data using SPSS whereby the current level of awareness of the market, liquidity as hindering factor, regulatory framework crucial in the market growth and a constant were the main predictors. The relationship can also be described using the regression formula as:

$Y=\beta o+\beta_1 X_{1+}\beta_2 X_{2+}\beta_3 X_{3+}\varepsilon$

$Y = 2.691+2.346X_1-1.188X_2-0.251X_3$

The result of the regression indicated P-Values of 0.000, 0.000, and 0.386 for each of the predictors. Since the P-Value calculated for the predictors regulatory framework and liquidity were less than 0.05, the researcher can conclude that a change in the predictors will result in a significant change in the dependent variable while the relationship with the current level of awareness is not significant.

In regards to multicollinearity, the study used the Variance Inflation Factor (VIF) which is used to quantify the severity of multicollinearity in an ordinary least squares regression analysis. Based on the coefficients output, the obtained VIF value when trend in growth in the market is the dependent variable is 2.804 for the regulatory framework, 1.597 for liquidity and 3.208 for information dissemination. The observed VIF values are between 1 and 10 which leads to the conclusion that there are no multicollinearity symptoms.

**Table 4.10Test of Normality**

| | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Regulatory framework crucial in derivative market growth | .512 | 34 | .000 | .424 | 34 | .000 |
| Liquidity as hindering factor to derivative market growth | .399 | 34 | .000 | .617 | 34 | .000 |
| Current Level of Awareness of market | .344 | 34 | .000 | .730 | 34 | .000 |

The study tested for normality within the data by using the Shapro-Wilk test since the data set had less than 2000 elements. From the test of normality, a p-value of 0.000 has been observed, resulting in the conclusion that the data comes from a normal distribution.

## 4.4 Model Fit

**Table 4.11Regression Test**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 14.809 | 3 | 4.936 | 10.633 | .000a |
| | Residual | 13.927 | 30 | .464 | | |
| | Total | 28.735 | 33 | | | |

a. Predictors: (Constant), Current Level of Awareness of market, Liquidity as hindering factor to derivative market growth, Regulatory framework crucial in derivative market growth

b. Dependent Variable: Trend in Growth of market

The above table indicates the statistical significance of the regression model that was run. According to the test, the regression model predicts the dependent variable significantly well. This is shown by the calculated P value of 0.0005, which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable (i.e., it is a good fit for the data).

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter consists of the summary of findings, answers to research questions, the conclusion and researcher's recommendations.

## 5.2 Summary of Key Findings

The background of the study was outlined, followed by statement of the problem, objectives of the study, research questions, justification and scope of the study in the first chapter. The general objective of the study was to examine the factors hindering the growth of the derivative market in Kenya.

The study based the research on 48 respondents as the representative sample from the trading members of the NSE. The respondents for the study were distributed as 85% being of age between 21 and 30 years and majority of the respondents having university, postgraduate and college education.

### 5.2.1 Regulatory framework and growth of the derivative market in Kenya

In regards to whether the regulatory framework is a crucial component of ensuring optimal growth within the derivatives market in Kenya the study found that 85% of the respondents responding yeswhile only 15% of the respondents responded no.The study also found that the relationship between the regulatory framework and growth of derivative market within a regression test was significant indicating that any change to the regulatory framework would result in changes in the growth of the derivative market. This means that the set policies have an influence on crucial components such as the interest rate regimes, transaction charges, taxation rate and licensing fees which are considered to affect the derivatives market and

even discourage or encourage investors as suggested by Peetz and Genreith (2011). The study also found that the framework is important to the growth of the market since it provides checks and procedures for making transactions in the market which boosts the confidence of investors, provides for healthy competition within the market, and protects against systemic risks in over the counter transactions.

The study in regards to the effectiveness of the regulatory framework found that majority of the respondents felt the regulations are clear in regards to the trading of derivatives and therefore can be termed as effective. The respondents in the study also noted that the surveillance by the regulator to deter market manipulation was effective whereas it was found effective to a small extent in relation to the ability to capture all the financial risks associated to the derivative market and therefore, some room to improve is still available. In regards to the effectiveness of the regulatory framework meeting participant's expectations in regards to the charges, fees and taxes, the study found that the regulatory framework was effective. In regards to the direct effect of the regulatory framework on the growth of the derivative market the study found that it had a significant effect on the number of participants and number of derivative instruments in the market. This may be caused by the lack of capturing all financial risks that were inherent in the trade of derivatives which may result in low investor confidence.

### 5.2.2 Liquidityand growth of the derivative market in Kenya

In regards to the second objective that was to find out the effect of liquidity on the growth of the derivative market, the study found that liquidity was considered a factor that hinders the growth of the derivative market because it enables settlements of transactions in a short time and is essential for price discovery. The study also found that the current level of liquidity in the derivative market in Kenya was consideredadequate by 56% of the respondents while 44% considered it as not adequate.Using the regression analysis the study also found that the

relationship between liquidity and the growth of the derivative market is significant meaning that changes to the level of liquidity would result in changes in the growth of the market.

The findings show that the derivative market is to a certain agreeable degree, able to make fast transactions in a timely manner. This is because a significant portion of the respondents having experience in derivative trading indicate that there is adequate to very adequate level of liquidity. The study in regards to whether the current capital market had the ability to make large volume transactions, found that majority of the respondents considered it able and thus could encourage the growth of the derivative market. The study also found that majority of the respondents were of the opinion that the current capital market in which the derivative market operates has a moderate to large extent of large changes in asset prices which is not suitable for transactions since large changes in asset prices hinder speculation and discourage investment in instruments that are classified as unstable.

In regards to whether the current capital market is characterized by an ease in making large transactions in the short run, the study found that the majority of the respondents agreed that this is the case meaning that the time at which a large transaction can be made in the capital market is not a hindering factor to the growth of the derivative market. In regards to the direct relationship of liquidity and the growth of the derivative market, the study found that liquidity did not have a significant effect on either trading volumes or number of instruments in the market but was considered a factor influencing the number of participants in the market. This would be caused by the opinion of some investors that the market is not adequately liquid and therefore discouraging participation in the market.

### 5.2.3 Information dissemination and the growth of the derivative market in Kenya

The study in regards to the effect of information dissemination on the growth of the derivative market in Kenya found that the current or present level of awareness of the derivative market in Kenya is considered to be low as indicated by majority of the

respondents in the study. This means that the bulk of trading members with the NSE agree that investors are not wholly informed about the derivative market and thus this may be afactor that can hinder the growth of the market. The study also found that while the derivative market has not been entirely overlooked by investors since it is considered an indicator for the health of the other segments of the capital market, majority of the respondents were of the opinion that the introduction and subsequent growth of the market in terms of participation was average to below average. This means that the information dissemination process meant to increase information about the market has not been optimal leading to low sentiments and information about the market and thus hindering its growth. The study also found that in regards to existent channels for information dissemination, majority of the respondents indicated that they were available and that the information shared was relevant to the investors. This shows that the information in regards to the derivative market has been shared by the market participants through the available channels and that relevance of information is not considered a factor that may hinder the growth of the derivative market.

In addition, the study found that the majority of respondents were of the opinion that there is a significant interest in the trading of derivative instruments which means that the market may be characterized by investor sentiments which could enhance the growth of the market. However, the results of the regression analysis found that the relationship between information dissemination and growth of the derivative market was not significant and therefore increasing information dissemination would not significantly change the trend of growth in the market.

The study also found that information dissemination was found to have little significant effect on the volume of trading in the derivative market and the number of derivative instruments.

However, the factor was found to be influential in determining the number of participants in the market.

## 5.3 Conclusion

The research findings on the factors hindering the growth of the derivative market indicate that the main factors discussed in the study that had a significant influence on the growth of the market are the regulatory framework and the liquidity level in the capital market. The regulatory framework was found as not being able to capture all the financial risks associated to the derivative market and therefore acted as a discouraging agent in increasing the number of participants. The findings in the fourth chapter also revealed that the opinion that was shared among a significant portion of the respondents was that the market liquidity was not as adequate as needed therefore, hindering the participation of investors in the market. The information to the investors was found to be relevant and disseminated through the available channels and therefore the factor did not significantly affect the growth of the derivative market. The study can therefore conclude that amongst the factors discussed, the regulatory framework and liquidity levels in the capital market significantly hinder the growth of the derivative market in Kenya.

## 5.4 Recommendations

The findings of the study show that the derivative market in Kenya has an average to below average growth rate as indicated by majority of the respondents. The reasons provided for this scenario include a regulatory framework that is not able to capture all financial risks in the market and hence protect investors, as well as low level of liquidity characterized by large changes in asset prices.

### 5.4.1 Recommendations for regulatory framework

The study recommends that the current framework should be reviewed and standardized so as to capture all inherent risks associated to the derivative market in Kenya. This will improve the confidence of investors and increase the participation within the market.

### 5.4.2 Recommendations for liquidity

The study recommends that the authorities governing the capital market, come up with ways that improve speculation and reduce the large changes in asset prices so as to encourage participation in derivative transactions and the number of derivative instruments available to investors.

### 5.4.3 Recommendations for information dissemination

The study recommends that the governing authorities within the capital market, create more channels that can be utilized to increase information about trading in the derivative market, the improved awareness of the market will result in increased market participation and growth.

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# APPENDICES

## APPENDIX I: LIST OF TRADING PARTICIPANTS

| # | Trading Participant | Address |
|---|---|---|
| 1 | Dyer & Blair Investment Bank Ltd | Goodman Tower, 7th floor |
| 2 | Francis Drummond & Company Limited | Hughes Building, 2nd floor |
| 3 | Suntra Investment Bank Ltd | Nation Centre,7th Floor |
| 4 | Old Mutual Securities Ltd | IPS Building, 6th Floor, |
| 5 | Kingdom Securities Ltd | Co-operative Bank House,5th Floor |
| 6 | AIB CAPITAL LTD | Finance House, 9th Floor |
| 7 | Sterling Capital Ltd | Barclays Plaza, 11th Floor, Loita Street |
| 8 | ApexAfrica Capital Ltd | The Riverfront, 1st Floor, Prof. David Wasawo Drive, Off Riverside Drive |
| 9 | NIC Securities Limited | Ground Floor, NIC House, Masaba Road |
| 10 | Standard Investment Bank Ltd | ICEA Building, 16th floor, |
| 11 | African Alliance Securities | Transnational Plaza, 1st Floor, Wing B, |
| 12 | Renaissance Capital (Kenya) Ltd | Purshottam Place, 6th Floor, Westland , Chiromo Road |
| 13 | CBA Capital Limited | CBA Centre Mara Ragati Road Junction, Upper Hill |
| 14 | Equity Investment Bank Limited | Equity Centre, Hospital Road, Upper Hill |
| 15 | Barclays Financial Services Limited | Waiyaki Way, West End Building, Floor 5 |
| 16 | Securities Africa Kenya Limited | The Exchange Building, 2nd Floor, Westlands Road |
| 17 | NgenyeKariuki& Co. Ltd. | Corner House, 8th floor |
| 18 | SBG Securities Ltd | CfCStanbic Centre, 58 Westlands |

| | | |
|---|---|---|
| | | Road |
| 19 | ABC Capital Ltd | IPS Building, 5th floor |
| 20 | Faida Investment Bank Ltd | Crawford Business park, Ground Floor, State House Road |
| 21 | Kestrel Capital (EA) Limited | 2nd Floor, Orbit Place, Westlands Road |
| 22 | Genghis Capital Ltd | 1st Floor, Purshottam Place Building, Westlands Road |
| 23 | KCB Capital | Kencom House 2nd Floor |
| 24 | EFG Hermes Kenya Limited | Orbit Place, 8th Floor, Westlands Road |
| | | |

Source: NSE (2018)

**APPENDIX II: INTRODUCTION LETTER**

Ikiao Stanley Muchui
P.O. Box 74592 - 00200
Nairobi, Kenya.

Dear respondent,

**RE: REQUEST FOR INFORMATION**

I am Ikiao Stanley Muchui, a Masters of Science (Finance and Accounting) student at KCA University, Nairobi Campus. As part of my course work, I am required to carry out a research project. I am therefore carrying out a research on the *"**factors that hinder the growth of derivatives market in Kenya".***

Kindly provide the required data by filling in the questionnaire accompanying this letter. Your participation will be highly valued and appreciated.

Thank you in advance

**Yours faithfully**

**Ikiao Stanley Muchui**

**Signature _____ Date _____**

**Day/month/year**

**APPENDIX III: QUESTIONNAIRE**

**INSTRUCTIONS:**

Kindly answer the following questions by writing a brief answer or ticking in the space or boxes provided respectively.

**PART A: BACKGROUND INFORMATION**

Please tick (√) as appropriate

1. Kindly indicate your age bracket.

| | | | |
|---|---|---|---|
| 21-30 years | ( ) | 30-40 years | ( ) |
| 41-50 years | ( ) | Above 51 years. | ( ) |

2. Level of education

| | | | |
|---|---|---|---|
| Certificate | ( ) | College | ( ) |
| University | ( ) | Postgraduate | ( ) |

Others (please specify)…….

3. How many years have you worked in the organization?

| | | | |
|---|---|---|---|
| Less than 5 year | ( ) | 5 - 10 years | ( ) |
| 10 - 15 years | ( ) | Above 20 years | ( ) |

**PART B: Effect of Regulatory Framework on Growth of Derivative Market**

1. In your own opinion, do you think that the regulatory framework is crucial in ensuring optimal growth of the derivative market in Kenya?

| | | | |
|---|---|---|---|
| Yes | [ ] | No | [ ] |

Please explain

……

……

……

2. State the extent to which the following componentsof the regulatory frameworkare effective in the growth of the derivative marketin Kenya? (Please tick: 1= Not at all, 2=small extent, 3= Moderate extent, 4 = Great extent, 5= very great extent)

| **Regulatory Framework** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Clarity of laws in regards to derivatives trading and transactions | | | | | |
| Effectivesurveillance by regulator to deter market manipulation. | | | | | |
| Captures all financial risks in derivative transactions. | | | | | |
| Meets participant expectations in regards to charges, fees and taxes. | | | | | |

**PART C: Effect of liquidity on growth of derivatives market in Kenya**

3. In your own opinion, would you say that liquidity in the capital market is a factor that hinders the growth of the derivative market?

   Yes [ ] No [ ]

   Please explain

   ……

   ……

   ……

   ……

4. How would you rate the level of liquidity in the newly formed derivative market in Kenya?

Very adequate [ ] Adequate [ ] Average [ ]

Slightly not adequate [ ] Not adequate at all [ ]

5. State the extent to which the current capital market is characterized by the following liquidity issues that may hinder the growth of derivatives market in Kenya?(Please tick: 1 = very great extent 2 = Great extent, 3 = Moderate, 4 = Little extent, 5 = very little extent)

| **Liquidity** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| Ability to make large volume transactions | | | | | |
| Large changes in asset prices | | | | | |
| Ease of transacting large transactions in the short run | | | | | |

**PART D: Effect of information dissemination on growth of derivative market**

6. What would you say is the present level of awareness of the derivatives market in Kenya?

   High ( ) Low ( ) Average ( ) Not sure ( )

7. Has the derivative market been overlooked by potential participants looking for investment options?

   Yes ( ) No ( )

   Please explain reason given

   ……

8. What has been the trend in terms of the growth of the derivatives market in Kenya?

   Excellent ( ) Average ( )

   Good ( ) below average ( )

9. Please indicate the extent to which you agree or disagree to the following statements relating to the effect of information dissemination on the growth of the derivative market in Kenya.

(Please tick: 1 = strongly disagree 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = strongly agree)

| **Information Dissemination** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| There is a channel of sharing information on the market. | | | | | |
| Information shared on the market is relevant to investors. | | | | | |
| Investors are willing to learn how to trade in derivatives market. | | | | | |

10. Please identify the key challenges experienced in improving investor awareness of derivatives market?

……
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…….

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**PART E: Growth of derivative market**

11. State the extent to which the following measures of growth in the derivatives market in Kenya have been hindered by the regulatory framework where 1 = No extent 2 = small extent, 3 = moderate extent, 4 = Great extent, 5 = very great extent

| **Measures** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| Trading volumes | | | | | |
| Number of derivative instruments | | | | | |
| Number of participants | | | | | |

12. State the extent to which the following measures of growth in the derivatives market in Kenya have been hindered by the level of liquidity where 1 = No extent 2 = small extent, 3 = moderate extent, 4 = Great extent, 5 = very great extent

| **Measures** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| Trading volumes | | | | | |
| Number of derivative instruments | | | | | |
| Number of participants | | | | | |

13. State the extent to which the following measures of growth in the derivatives market in Kenya have been hindered by information dissemination where 1 = No extent 2 = small extent, 3 = moderate extent, 4 = Great extent, 5 = very great extent

| **Measures** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| Trading volumes | | | | | |
| Number of derivative instruments | | | | | |
| Number of participants | | | | | |

***********THANK YOU FOR PARTICIPATION*********

**APPENDIX IV: TIME FRAME**

| **ACTIVITY** | **SCHEDULE** |
|---|---|
| Draft proposal writing and Approval by Institutional review board (IRB) | June 2018 |
| Sampling and data collection | June – July 2018 |
| Data entry and analysis | June - July 2018 |
| Abstract | July 2018 |
| Draft report presentation | July - August 2018 |
| Final report presentation | September –October 2018 |

**APPENDIX V: BUDGET**

| **ITEM** | **RATE** | **TOTAL KSHS.** |
|---|---|---|
| Trips to the selected sites by Researcher and Assistants | 3 trips @ Kshs. 200.00 | 600.00 |
| Payment to Research Assistants | 3 * 1000.00 * 7 days | 21,000.00 |
| Miscellaneous expenses (internet, printing, photocopying, telephone, travel, etc) | 10,000.00 | 10,000.00 |
| 10% Contingency | 10% | 3,160.00 |
| **GRAND TOTAL** | | **34,760.00** |